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A study was conducted to determine the diffusion of educational innovations to urban and rural government secondary schools of Thailand and to teachers within these schools. Data were acquired by selecting 38 schools at random and having 629 teachers, 38 principals, and 66 changwad (provincial) education officers complete questionnaires. Some of the major findings were (1) younger teachers tended to become aware of innovations first. (2) teachers with high exposure to mass media tended to adopt innovations earlier; (3) women teachers were more likely to view innovations as beneficial; (4) principals who had traveled abroad usually became aware of innovations earlier; (5) schools with principals who were older men and had traveled abroad tended to adopt innovations before other schools; (6) principals who saw themselves psychologically close to their faculty viewed innovations as beneficial; (7) better educated changwad officers were likely to become aware of innovations earlier; (8) the earlier the schools in changwads adopted innovations, the more likely their officers were to have traveled abroad and have had more experience; and (9) changwad officers who viewed innovations as beneficial were usually older and had had experience as secondary school teachers. (RH)

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DIFFUSION OF INNOVATIONS: EDUCATIONAL CHANGE IN THAI GOVERNMENT SECONDARY SCHOOLS

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and
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Michigan State University

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DIFFUSION OF INNOVATIONS:

EDUCATIONAL CHANGE

IN THAI GOVERNMENT SECONDARY SCHOOLS

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OFFICE OF EDUCATION

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PREFACE

A large-scale research project such as the present investigation necessarily represents the collective efforts of a great number of individuals and organizations. Following is an enumeration of some of the most important actors in this research play, approximately in the order in which they appeared on stage.

Dr. Everett M. Rogers and Dr. Donald J. Leu initiated the present study, were instrumental in planning its research design, and provided overall direction of the Project. Rogers was particularly responsible for overseeing the methodological aspects of the study, while Leu was chiefly responsible for effecting coordination of the present activity with the Michigan State University-Thailand Educational Planning Project and the MSU College of Education. These two project co-directors, although representing different organizational units within the University, shared a common interest in research on educational change in a developing country.

Dr. Nan Lin was chiefly responsible for conduct of the pilot study in three Michigan high schools. Lin also designed the procedures for sampling Thai schools and teachers, and played a major role in developing the initial format of the data-gathering instrument.

Dr. Fredric J. Mortimore was responsible for pretesting and finalizing the instrument in Thailand, and for data-gathering there. Mortimore also authored the first chapters of the present report.

Dr. Donald F. Schwartz wrote much of the Michigan pilot study report and provided important back-stop support at Michigan State University for conduct of the data-gathering in Thailand. Further, he shared in planning the analysis of the Thai data.

Mr. Richard E. Joyce analyzed the Thai data and played an important role in writing the later chapters of the present report.

Miss Jeanne C. Kuo assisted in the Thai data-analysis, and authored the chapter dealing with changwad education officers.

Mr. F. Floyd Shoemaker also participated in the Thai data-analysis and authored the chapter dealing with the school principals.

Special acknowledgment should be expressed to the following:

To the Educational Planning Division within the Thai Ministry of Education, to its Director, Dr. Kaw Swasdi Panich, who provided our research staff with assistance of every possible nature, and to Mr. Muangchai Tajaroensuk of the Educational Planning Office who, by working closely with the Project's Field Research Director, served as an essential socio-cultural link with Thai culture and bureaucracy.

To Michigan State University, the U.S. Agency for International Development, and the Inter-University Research Program in Institution Building (the "Pittsburgh Consortium") for sponsoring the present study.

To the Michigan State University Institute for International Studies in Education and especially its Director, Dr. Cole S. Brembeck, and to the Michigan State University Department of Communication, particularly its Chairman, Dr. David K. Berlo.

To Dr. Raymond N. Hatch, Chief-of-Party of the Michigan State University Education Planning Advisory Group in Thailand, for his support of the Project's field operations.

To the Thai Ministry of Education, and to the National Research Council of Thailand.

To 629 teachers, 38 principals, and 66 changwad education officers, for their willingness to tell us about their experiences with and their opinions of educational innovations.

SUMMARY

The intent of this study is to examine the diffusion of educational innovations from the Thai Ministry of Education to the government secondary schools of Thailand and to the teachers within these schools. This report focuses on the distinguishing characteristics of teachers, principals, and changwad (provincial) education officers who become *aware* of and *adopt* educational innovations relatively early and who perceive such innovations as relatively *beneficial*.

The major findings are as follows:

1. The earlier in time that *teachers* become *aware* of educational innovations, the more likely they are to:

    - be younger.
    - have more formal education.
    - have less teaching experience in their present school.
    - read more professional journals.
    - know the identity of Ministry of Education Officials.
    - have a knowledge of other countries.
    - be open-minded.
    - by favorably oriented to educational change.
    - perceive their principal as favorable to educational change.
    - perceive themselves as opinion leaders about new educational practices.

2. The earlier in time *teachers adopt* educational innovations, the more likely they are to:

    - have high exposure to the mass media.
    - read more professional journals.
    - perceive themselves as good teachers.
    - believe that others perceive them to be good teachers.
    - feel satisfied with their teaching role.
    - believe that their principal gives frequent feedback to them and to other teachers.
    - have close friends who are also teachers.
    - perceive themselves as opinion leaders about new educational practices.

3. The more *beneficial teachers* perceive educational innovations to be, the more likely they are to:

    - have parents with relatively little education.
    - be women.

have relatively low teaching salaries.
have high exposure to the mass media.
read more professional journals.
be closed-minded.
perceive themselves as good teachers.
believe that others perceive them to be good teachers.
feel satisfied with their teaching role.
feel secure in their present jobs.
feel that their principal is psychologically close to them and their fellow teachers.
feel that they communicate with their principal frequently about educational matters.
believe that their principal gives frequent feedback to them and to other teachers.
have close friends who are also teachers.
perceive themselves as opinion leaders about new educational practices.
perceive their school faculty as cohesive.
perceive that their fellow teachers are favorable toward new educational practices.

4. The earlier in time that principals become aware of educational innovations, the more likely they are to:

have high salaries as principals
have more education.
have knowledge of other countries.

5. The earlier in time schools adopt educational innovations, the more likely their principals are to:

be men.
be older.
have high salaries as principals
have traveled outside of Thailand.
have had more years of experience as principals.
perceive themselves to be good administrators.
meet frequently with changwad education officers and Department of Secondary Education personnel.
report frequent communication with other principals.
report frequent meetings with people from Thai colleges or universities.
report frequent meetings with their teachers to discuss educational problems.

6. The more beneficial principals perceive educational innovations to be, the more likely they are to:

have other income in addition to their government salary.
be closed-minded.
perceive themselves as psychologically close to their school faculty.

7. The earlier in time that changwad education officers become aware of educational innovations, the more likely they are to:

have more education.
have traveled outside of Thailand.
be open-minded.
be favorably oriented to educational change.
perceive the Under-Secretary of State for Education as unfavorable to new educational practices.
have less frequent visits to other changwad education officers to discuss educational problems.

8. The earlier in time that schools in changwads adopt educational innovations, the more likely their changwad education officers are to:

have high salaries as changwad education officers
have more education.
have traveled outside of Thailand.
have had more years of experience as changwad education officers.
perceive school principals in their changwad as favorable to new educational practices.

9. The more beneficial changwad education officers perceive educational innovations to be, the more likely they are to:

be older.
have had more years of experience as secondary school teachers.
perceive principals and other changwad education officers as favorable to new educational practices.
believe that teachers and principals should participate in school decision-making.
report fewer formal meetings with school principals to discuss educational problems.

DIFFUSION OF INNOVATIONS: EDUCATIONAL CHANGE IN THAI GOVERNMENT SECONDARY SCHOOLS

by

Everett M. Rogers, Richard E. Joyce, Jeanne Ching-Chen Kuo, Donald J. Leu,
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Chapter I

INTRODUCTION

Background of the Study

This report is concerned with analysis of the process by which new educational practices (such as school libraries, audio-visual aids, and objective testing techniques) are adopted by and diffused through academic government secondary schools in Thailand. This research project, initiated in 1964, was designed to provide information to (1) Thai Ministry of Education officials, (2) foreign educational advisors, (3) the United States Agency for International Development, and (4) the Michigan State University Advisory Group (a number of professors from Michigan State University serving as consultants to the Thai Ministry of Education). While much effort has been expended by Thai and American educators in the 1950's and 1960's to introduce educational innovations into Thailand, and although considerable change in educational methods has occurred, little is known about the process by which new ideas spread to Thai teachers and are adopted or rejected by them. It is the purpose of the present research project to find out.

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Until this study was undertaken, there had been no previous investigation of educational diffusion in Thailand or in any other developing country. Although about 50 such studies have been completed in the United States, the Thai situation is so different from that found in the United States that it is doubtful if results obtained in the United States are completely applicable to Thailand. There are, however, some 1,400 publications on the diffusion of other types of innovations, such as farm practices, medical drugs, family planning methods, industrial techniques, and consumer products. Thus, it was more easily possible to develop concepts, frameworks, and methods for studying the diffusion of innovations in Thailand, even though the locale is markedly different from the United States in its socio-cultural make-up.

A study of educational diffusion was proposed in 1964 to the Research Advisory Committee of the Thailand Educational Planning Project at Michigan State University. This group was one part of an educational advisory project in Thailand, conducted by the MSU Institute for International Studies in Education, and sponsored largely by the U.S. Agency for International Development. The Research Advisory Committee approved the proposal for the present Project, and agreed to make available some funds for this investigation.

Further monies were obtained from the Inter-University Research Program in Institution-Building, headquartered at the University of Pittsburgh. This consortium, financed by the Ford Foundation and the U.S. Agency for International

Development, is concerned with studying the process of institution-building in developing countries.*

The consortium grant was received in September, 1965, and a research staff was employed to begin the process of research design. It was decided to conduct a pilot study in the United States before beginning the main data-gathering in Thailand. This preliminary investigation was carried out in three innovative Michigan high schools during the fall of 1965 and winter of 1966. The experience gained from the conduct of this pilot study contributed to the Thai study in terms of instrument-construction and data-analysis techniques.**

During 1965 and early 1966, Professor Donald Leu of the Project research staff made several trips to Thailand in order to learn more about the educational system there, and to make preliminary arrangements for data-gathering. Fred Mortimore arrived in Thailand on March 1, 1966, and was engaged in instrument-construction, pretesting, data-gathering, and coding for one full year. The data were then analyzed by the Project staff at Michigan State University. Further details on the research procedures followed in Thailand are presented in Chapter III of this report.

Novel Aspects of the Thai Diffusion Project

Several aspects of the present investigation are distinctive:

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*Institution-building is defined essentially as the process of introducing new ideas into an organization. The definition developed by the Inter-University Research Program is: "Institution-building is the planning, structuring, and guidance of new or reconstituted organizations which (a) incorporate, foster, and protect normative relationship and action patterns, (b) perform functions and services which are valued in the environment, and (c) facilitate the assimilation of new physical and social technologies." For details, see Inter-University Research Program in Institution-Building (1964).

**The results of this pilot study are reported in Lin and others (1966), Lin (1966), and (1966), and Lin (1968).

1. It was the first study* of education diffusion conducted outside the United States.**

2. The diffusion process was studied utilizing data obtained from three hierarchial levels in the educational system of Thailand. Data were gathered from: (1) all teachers in a sample of 38 Thai government secondary schools, (2) their direct administrative superiors, i.e. the principals in these 38 schools, and (3) the principals' superiors, the changwad*** education officers, who are officials of the Thai Ministry of Education. These data allowed for investigation of diffusion within the social structure of a government bureaucracy, a setting in which almost no past diffusion research has been conducted.****

3. Ten innovations were studied, some of which were adopted by teachers and others by individual schools. An example of the former is represented by the practice of giving objective classroom tests; an illustration of the latter is provision of vocational education in a secondary school. Both individual

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*Several such studies, however, now being conducted, were in large part inspired by the present study. Examples are (1) an investigation of educational diffusion among 300 teachers in 30 South India schools by Shaline Bhogle, a Ph.D. candidate at Camania University, Hyderabad, India; and (2) a study among 200 teachers in six pilot schools in Pakistan by Anwar K. Khan (Ph.D. dissertation, Institute for International Studies In Education, Michigan State University).

**Perhaps it is particularly appropriate that the present investigation was conducted in Thailand, a setting where the introduction of educational changes by an English schoolteacher has been made famous by Anna and the King of Siam.

***Thailand is divided into 71 political subdivisions called changwads or provinces.

****A type of communication research which Rogers with Svenning (1968) recommend be given a particularly high priority because of its potential contribution to untangling development problems in less developed countries.

(teacher) innovation decisions and collective (school system) innovation decisions were studied. The latter have seldom received much attention in past diffusion studies.

So the present investigation is unique in the sense that it was conducted in a less developed country, it focused on diffusion *within* a social structure, and it analyzed collective as well as individual innovation decisions.

Objectives

One objective of the present project is to determine how educational innovations are diffused to, and adopted (or rejected) in, Thai government secondary schools. Specifically, an effort is made:

1. To determine how decisions about the use of new educational ideas are made by a centralized education organization, the Thai Ministry of Education. This includes consideration of the origin of educational innovations, their sponsorship and evaluation, and eventual recommendation to schools.

2. To determine the variables related to knowledge of innovations, favorable attitudes toward innovations (which we will call "perceived beneficiality" in this report), and innovativeness, among teachers, principals, and changwad education officers.

3. To determine how educational innovations spread to teachers through the hierarchical structure of the Thai Ministry of Education.

Organization of the Report

The remainder of the present chapter is concerned with briefly tracing the historical development of public education in Thailand. Then, in Chapter II, the organization and administration of Thai education is reviewed, so that the reader can better comprehend the cultural and organizational setting in which the inquiry was conducted. Chapter III treats the methodological details of how the investigation was designed and carried out. Three chapters then follow which contain the main results of our data-analysis: Chapter IV deals with the diffusion of innovations among teachers, Chapter V with the communication of innovations among school principals, and Chapter VI with the diffusion of new ideas among changwad education officers. Chapter VII contains conclusions and recommendations for educational change and for future inquiry.

Pre-Revolution Public Education in Thailand

Government-sponsored and financed education in Thailand dates from 1871 when, returning from a state visit to observe governmental administration in India, King Chulalongkorn ordered establishment of the Palace School (or Royal Command School), which was to educate sons of princes and nobles. From among the ranks of students completing such instruction, King Chulalongkorn planned to select future government officials.

Prior to the establishment of this first Palace School, all organized education, extending from the earliest recorded history of Thailand, had been provided by Buddhist monks who served as teachers in schools maintained by monasteries and _wats_ (temples). Buddhist law and tradition prescribes that all males professing faith in the Lord Buddha spend, at early puberty (eight or nine years of age) and again during later adolescence (18 or 19 years of age), at least three months in a monastery or _wat_ as a _bhikku_ (mendicant).* Having fulfilled his obligations as a _bhikku_, a young male is considered to be qualified to perform the roles of citizen and Buddhist; those males who have not fulfilled their bhikku obligations are considered by society as raw, green, or incomplete men.

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*The initial term served as a _bhikku_ might best be equated by Westerners with first communion; attainment of _full_, or adult ordination has traditionally represented for Buddhists the single most import _rite d'passage_ in the ethical and religious socialization of young men.

Prior to the establishment of secular schools, mendicants were taught the rudiments of reading and writing the national language (Thai) and were also expected to gain some knowledge of Pali, the language spoken by Buddha. A thorough understanding of Buddhist scriptures, together with comprehension of Buddhist metaphysics and sympathy for ecclesiastical discipline, was also to result from such study.

Undoubtedly because education had traditionally been associated in the public mind with Buddhism and the highly respected religious hierarchy, King Chulalongkorn chose to establish the first public schools in monasteries or wats. The first was opened in Bangkok at Wat Maharaba, and by 1886 35 state-supported monastery schools had been opened; 21 of this number were in Bangkok.*

In 1867 the Department of Education was established by royal decree with Prince Damrong, King Chulalongkorn's brilliant half-brother, as Director-General. The newly-formed Department of Education was assigned responsibility for cultural and religious affairs as well as for education. In formulating plans for the subsequent development of public education, Prince Damrong turned for advice and collaboration to the (Buddhist) Supreme Patriarch of Thailand. A pattern of formal cooperation between religious and secular leaders in the field of education was thus established at an early date, and has persisted since.

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*Figures published in 1952 indicate that as recently as 1949, 54 percent (10,827) of the 20,050 government schools then operating were located in wats. See Havanadana and Vonucsayan (1952, p. 18).

While the Department of Education encountered no insurmountable problems in establishing schools in Bangkok, it lacked the administrative machinery to do so in rural areas. As a result, an agreement was formalized in 1898 under which the Ministry of Interior was to supervise government-supported public education outside of Bangkok. The Minister of Interior delegated the task of opening rural schools to local officials who, in turn, were to organize education committees within each tambol (a geographic region comprising several villages). Local Buddhist abbots were recruited by Ministry of Interior officials at the provincial level to organize and supervise instruction within the tambol schools; teaching duties were performed by monks because they represented, in most rural localities, the only individuals possessing both literacy and teaching experience.

The initial comprehensive plan for educational development was also formulated in 1898. This first National Scheme of Education* specified curricular content and established grade levels within the public education system. Specific reference was also made in the scheme for providing educational opportunities to Thai women.

Under the Act of Ecclesiastical Administration promulgated in 1902, Buddhist abbots who supervised state-financed schools were required by the Ministry of Education to submit periodic progress reports. From this initial requirement has grown a very comprehensive reporting system in Thai education.

By 1907 the government education system was cast in a 3-3-5 mold with the following divisions: (1) a three-year Lower Primary Course taught in the vernacular, stressing reading and writing skills, completion of which was

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*The National Scheme of Education was revised in 1909, 1913, 1933, 1936, 1951, and 1960.

A . Applied Linguistics

. Audiovisual Aids

B

C

D

E * . English (Second Language)

F

G

H

I

J

K

L ✓ * . Language Instruction

* . Language Laboratories

. Language Programs

M ~~Migrant Youth~~

* . Migrant Child Education

/ ~~Migrant Education~~

*. ~~Migrant Children~~

N ✓Migrant Schools

. Mexican Americans

O. Oral English

P

Q

R

[illegible]

S * . Spanish Speaking

T

* . Units of Study (Subject Fields)

V

W

X

Y

Z

considered necessary for all boys; (2) two three-year Upper Primary Courses which differed only in that one provided elementary English language instruction for the benefit of those few boys who could enter secondary schools in which English was the language of instruction; (3) three five-year Secondary Courses: one designed for boys planning to enter the Civil Service, one for boys who intended to specialize in technical fields such as engineering or medicine, and one (taught largely in English) for boys who intended to continue their education at foreign universities.

By 1910 the system of government-sponsored schools expanded to include coeducational institutions at the Lower Primary level. Organization, administration, and supervision of these new coeducational schools were shared by the Ministries of Education and Interior. The latter was responsible for curricular matters, textbooks, examinations, methods of teaching, inspection, and distribution of funds, while the former handled budgeting, enrollment of pupils, and teacher training. When coeducational secondary schools were later added to this network, the Ministry of Interior retained control over certain aspects of primary education (lower and upper), but the Ministry of Education assumed sole and exclusive responsibility for coeducational secondary education.

In 1910 the Ministry of Education first assigned school inspectors to changwads to insure that schools were administered according to government policy.* At that time the Ministry of Education had not yet established the position of changwad education officer, and the school inspectors reported to the changwad governor. Later, school inspectors were required to report to either the Ministry of Education if assigned to inspect coeducational secondary schools, or to the Ministry of Interior if assigned to inspect sex-segregated secondary schools.

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*A Department of School Inspection was organized within the Ministry of Education in 1906.

The present structure of Thailand's public school system was largely completed by the time of King Chulalongkorn's death in 1910. A network of secondary vocational schools was begun in 1913 and three years later Chulalongkorn University, Thailand's first university, was opened. A law making school attendance compulsory between seven and fourteen years of age was enacted in 1921, but because of shortages in funds, teachers, and buildings, no attempt was made to enforce this law until 1935.

Post-Revolution Public Education in Thailand

Under the constitutional monarchy, ushered in by a coup d'etat staged by Western-educated Thai intellectuals in 1932, relatively few basic changes were made in Thailand's public education system. The Constitution simply specified that:

1. The individual shall enjoy absolute freedom in education providing the institutions are not run contrary to the educational laws or the public safety.
2. The aim of education is to train people to become good citizens, healthy and strong, and with the capacity of earning their own living.
3. It is the duty of the State to promote and foster education. All institutions must be under the care of the State. Education is the responsibility of the State. Higher institutions of learning shall be under their own management.
4. Primary education in State and municipal schools shall be given free of charge. It is the duty of the State to equip the schools suitably.

One result of the change to a constitutional monarchy and parliamentary government was to increase pressure exerted upon civil authorities to extend primary educational opportunities into geographic areas not formerly served.

Then in 1936 the National Scheme of Education was again revised, adopting a 4-3-3-2 plan for public education; government schools today operate within this framework. A Private School Act, adopted in 1936, provided financial assistance to private schools.

In part because the National Constitution contained an article specifying that the ratio of elected to appointed membership in the National Assembly was to be based upon literacy figures for the kingdom, strong pressure developed in the immediate post-revolutionary period for the further extension of elementary education to rural areas and for provision of educational opportunities for adult illiterates. As a result, the Ministry of Education, during the period of 1937-1947, expended much of its efforts in meeting these two challenges.

Adequate preparation of teachers in numbers sufficient to staff the growing educational system has, in the modern era, represented one of Thailand's most crucial problems. A UNESCO mission in Thailand in 1949 reported that seven out of every eight elementary teachers in the country lacked adequate preparation for teaching. By 1961 71 percent of the elementary teachers in Thailand were still listed as "unqualified." In contrast, only 36 percent of those teaching in secondary schools were unqualified in 1961.

In an effort to improve the quality as well as the quantity of teachers, the Thai government in recent years has inaugurated several new teacher-training programs. To encourage those already in the profession to improve their skills, in-service training programs have been expanded and improved. By attending short courses at teacher-training institutions or universities, and by passing an examination held annually in either provincial centers or in Bangkok, teachers at both the elementary and secondary levels may now more easily achieve minimum qualification standards.

Since 1948 the Ministry of Education has offered in-service teacher-training short courses. These programs are organized and administered by regional education officers rather than established teacher-training institutions, colleges, or universities, and they are generally more specialized in nature than those programs offered by colleges or universities.

Correspondence study has also been encouraged, and teachers may now up-grade existing skills through this means. Conferences and workshops held during holiday periods have also grown in popularity, and are now convened by changwad education officers, regional education officers, departments within the Ministry of Education, teacher-training institutions, and Khuru Sapha (the national teacher organization).

Western Impact on Public Education in Thailand

When one contrasts state-supported education with wat or monastery-provided education (the latter is Thailand's only "indigenous" educational tradition), one must conclude that Western influences upon government-provided education have been very significant. Historically, direct and indirect Western influence even predates establishment of government-financed secular education. In 1662, Monsignor de la Mott Lambert founded the first school in Thailand administered by a foreigner. By 1676, 100 pupils were in attendance at a Catholic seminary at Ayudhya. Upon the death of King Narai in 1688, however, widespread suspicion of European intentions resulted in the expulsion of Christian missionaries, thus temporarily ending more than two decades of Western influence on Thai education.

It was not until after the ascension of King Mongkut to the throne in 1851 that Westerners were again welcomed to Thailand in significant numbers. Mongkut saw that China had failed to maintain her isolation against European pressure, and felt that Thailand must come to terms with the external forces threatening her and begin to accommodate herself to the new world. The first Presbyterian mission school was opened in 1852; others were established soon thereafter. French Catholic missionaries opened schools in Bangkok and Chantaburi Province in 1854. These and other mission schools were the nucleus of a private school system that by 1948 included more than 1,500 separate institutions enrolling 121,000 students.

King Chulalongkorn, son and successor to King Mongkut, was tutored by Western teachers from the age of ten. He made a determined effort to reform and reorganize the Thai national way of life along Western lines. He continued his father's policy of hiring large numbers of Westerners to advise government departments.

Soon after becoming Director-General of the Department (later Ministry) of Education in 1887, Prince Damrong appointed Sir Robert Morant, an Englishman, to the dual posts of Inspector of Government Schools and Advisor to the Director-General. Morant was succeeded in the post of Advisor to the Director-General by a series of British citizens.

Under King Vajiravudh's reign, vocational education was introduced into government-supported schools. He was also responsible for introducing the Boy Scout movement and Junior Red Cross into Thailand. Chulalongkorn University, modeled upon Western institutions of higher learning, was opened at this time. Other Western influences were and are reflected in curriculum reform, higher education, adult education, pre-school education, physical education and school health services, foreign study, teacher training, educational administration, and school finance.

Following World War II, Thailand began to look increasingly to the United States, rather than Europe, for educational assistance. American influence is most immediately apparent today in the fields of teacher training, educational planning, comprehensive secondary education, electronic data-processing, vocational education, and higher education.

Chapter II

ORGANIZATION AND ADMINISTRATION OF EDUCATION IN THAILAND

Governments maintain and administer publicly-supported schools partly in order to transmit, intergenerationally, those accepted patterns of thought and behavior considered essential by society. These state-provided institutions thus reflect in many subtle and generally unrecognized ways the extent to which a sponsoring society, at any given point in time, is either wedded to tradition or receptive to change. But receptivity or non-receptivity to change in patterns of thought and behavior is always and everywhere a matter of degree, for few cultures remain static over an extended period of time.

Contemporary educational practice, organization, and administration in Thailand reflect unmistakably the considerable impact which Western thought has exerted upon traditional wat-centered education. But Western importations to Thailand, both ideological and technological, have passed upon arrival at their port of disembarkation through an informal cultural customs. Thus those elements of Western educational theory and practice unsuited to the Thai cultural milieu simply do not find their way into the system. They are dropped at dockside, or soon thereafter.

Several studies have appeared recently which deal specifically with normative behavior within the Thai bureaucratic subculture, the social setting within which this research project was conducted. But this bureaucratic subculture - and hence the educational system - is firmly imbedded in and profoundly influenced by a more comprehensive social matrix; so our attention is first directed to an elucidation of several basic Thai cultural norms, some understanding of which is considered essential to appreciation of the bureaucratic and, by extension, the educational subcultures and their receptivity to externally-generated innovations.

The Thai Cultural Setting

According to Wilson (1962, pp. 73-84), the Thai world-view perceives the universe in terms of a moral continuum. All elements of the cosmos are related to one another in terms of power, which, in turn, is determined by virtue and moral value. One's social position is determined by the degree to which one is subject to the will and power of others or, conversely, by the extent to which others are subject to the will and power of oneself. By logical extention, a "just unity" can be said to exist between virtue and power; those with power are good and therefore deserve power. Power, by definition, justifies itself, for it is the manifestation of, or reward for, goodness.

Pursued further, "moral goodness" is perceived by the Thai as resulting in good fortune, the latter a sign and proof of the former. Manifestations of good fortune include high social position and wealth, fame, high rank in the government, happiness, praise or high reputation. Merit, which is considered by Thai Buddhists as the accumulated results of good deeds in many lives (and thus is a state at least partly beyond control), determines moral goodness.

Wilson (1962, p. 46) also characterizes the Thai as "determinedly autonomous" and states that the Thai "...carries the burden of social responsibility lightly. Within a structure of social obligations and rights, he is able to move and respond to his personal and individual inclinations without suffering a mortal social wound." In a similar vein, Embree (1950) states that "the first characteristic of Thai culture apparent to an observer from the West, or from Japan or Vietnam, is the individualistic behavior of the people. The longer one resides in Thailand, the more one is struck by an almost determined lack of regularity, discipline and regimentation. In contrast to Japan, Thailand lacks neatness and discipline; in contrast to Americans, the Thai lack respect for administrative regularity and have no industrial time sense."

Wilson (1962, p. 46) attributes this characteristic avoidance of personal regimentation to the influence exerted by Theravada (Hinayana) Buddhism and "the very substantial luxury of resources in which Thai society has developed." Theravada Buddhism, Wilson maintains, "...has as its central tenet salvation through individual accumulation of merit." Accumulating merit and making progress along the eightfold path of enlightenment are viewed as lonely and individual tasks in which, generally speaking, one may not look to others for assistance. Tolerance of individuality and unwillingness to suffer regimentation is, of course, reflected in the social structure. Status, whether ascribed or achieved, is seen as a personal attribute. "A man's social position is a consequence of his merit, in either the Buddhist or civil service sense of the word. As merit of men is capable of delicate graduation, so is social status." (Wilson, 1962, pp. 51-62).

As is more or less true in other Southeast Asian lands where Buddhist philosophy predominates, adherence to a common store of beliefs serves to promote cultural unity among people divided by socio-economic interests. In Thailand, as Wilson (1962, pp. 81-82) points out, Buddhism "...binds the highest and lowest in what is seen as a just and natural scale of status and right.... It reinforces the social virtues upon which society rests. It encourages a love of enjoyment, coolness in the face of trouble, and indifference to disappointment, which make life easier and suffering bearable. These concepts, all of which are a part of Thai social and religious attitudes...are vital in the nation as a whole and serve to unify the classes in outlook."

Partly because of the pervasive influence of this Buddhist world-view, the Thai have not become prisoners of that compulsive achievement orientation which charactizes many Western societies. Love of enjoyment and coolness in the face of trouble are manifest in a preference for unhurried or carefully considered change. While the Thai shares with his Western counterpart a desire for socio-economic progress, he marches to the cadence of a different drummer. He does not display an overweening urgency to immediately solve problems which have remained unresolved for centuries, and he frequently views as rather immature and unworldly the frantic activity which accompanies even minor progress in the West. The Thai wishes to improve upon and elaborate a way of life which he believes to be intrinsically rewarding and suited to his cultural inheritance.

Attitudes toward magic and the pseudo-sciences of astrology, palmistry, and numerology also provide interesting clues to the Thai Weltanshauung. Magical practices center around the general principle that manipulation of some formula - material, verbal, or ceremonial - will achieve a desired effect. Thais at all social levels reportedly consult astrologers or numerologists before making important personal decisions. Contrary to beliefs associated with spirit propitiation, astrology, palmistry, and numerology are perceived as means of coordinating one's activities with inevitable events.

It is difficult to understand the Thai world-view, and hence their adaptation to Western ideology and technology, without reference to yet another pervasive attitude, expressed by the term sanuk, a feeling that life should be enjoyed. Wilson (1962, p. 84) comments that "the Thai are renowned as a light-hearted people, and this reputation is not undeserved. They appear to believe that all activities should be enjoyable...not only games and recreation...but politics religion, and work...Temple fairs, elections, travel, and coups d'etat should be enjoyable. This seeking of enjoyment in all things is fundamental in

Thai behavior and for the Thai it may be said that what cannot be enjoyed is thereby deprecated."

Bureaucratic Subcultural Norms

Translating basic cultural values into terms descriptive of Thai organizational behavior, Siffin (1966, pp. 159-160) notes that efficiency, productivity, and rationality are not dominant value-orientations: "...The authority which gives order and impetus to bureaucratic action is not primarily the legal-rational authority of the Weberian model...." The Thai bureaucracy reflects the values of the larger cultural environment; the rational tenets of Western bureaucracy are an import basically foreign to Thai methods of social organization and civil administration. Hence, Thai bureaucratic subculture represents a somewhat unique amalgam of basic Thai values and Western administrative forms. Siffin (1966, pp. 161-163) enumerates the following dominant value-orientations of Thai bureaucrats:

> 1. Hierarchial status, which is inherently valued within the bureaucracy and its setting. The bureaucratic system is to a considerable degree organized and operated to give meaning and support to status.
>
> 2. Personalism, or the reliance upon personal relationships and personal concerns as primary bases for behavior within the system.
>
> 3. Security, or the desire to preserve one's membership in the system, is also a basic value....This significance of security as a value lies partly in the fact that the bureaucracy is a way of life and a source of status, and that there are few, if any, attractive alternatives to the bureaucracy within the larger society.
>
> 4. Finally, innovation is not highly valued. Generally, innovation is linked with a purposive orientation, a problem-solving posture, and a concern with administrative rationality....In a bureaucratic system which tends to be valued for itself rather than as a productive, responsive instrumentality, innovation is not highly relevant, and may be regarded as undesirably disruptive.

The bureaucratic subculture, Siffin states, perceives uninhibited innovativeness as dysfunctional and threatening to more deeply held values. The likelihood of adoption of a new idea appears to rest upon several identifiable factors, chief among these being compatibility of the idea with subcultural values and the sponsorship of the innovation.

Nairn (1966) analyzed in detail the failure of two United Nations' educational projects in Thailand to attain their goals; these projects were the Cha-Choengsao Educational Pilot Project and the Thailand UNESCO Fundamental Education Center (TUFEC). Nairn (1966, p. 97) underlines the importance of sponsorship to success of an innovation.

> ...the decision-making group in Thailand is small and easily definable, and has sufficient autonomy to act with great freedom.... Although little of moment can be done in Thailand without the approval of this group, obtaining their sanction gives one great freedom. Therefore, to gain government support, one must be able to reach this circle.

In reference to failure of the fundamental education project, Nairn (1966, p. 109) notes that...

> ...the TUFEC operation was assigned to the Ministry of Education. The consequence of this basic decision was that United Nations officials, regardless of level, simply did not have the ear of those who mattered. At best the chief of mission might have reasonable access to an undersecretary. As has been noted earlier..., this was not where power was located in the Thai hierarchy.

Nairn (1966, p. 66) illustrates the relationship between innovation adoption and compatibility with cultural values.

> The pilot project failed...not because the machines supplied by USOM and Shell were too complicated, or because Thai youth was ineducable in these fields, but because the project did not assess the specifics of the local...cultural situation. UNESCO believed that there was a universal hunger for education, whereas something to the contrary may have been true. At best, there may have been a very specific hunger for certain types of education where rewards were clear and where one was not called upon to transgress too many cultural boundaries. The Pilot Project did not make prior evaluations of these matters.

Organization and Administration of the Ministry of Education

Administrative relationships within the Ministry of Education are diagrammed in Figure 2-1. This officially-prepared organization chart shows the Ministry composed of two offices and eight departments. The Minister of Education is a political appointee and sits on the Cabinet, where he represents the interests of education and educators in decisions involving national policy. His official relationship to the Prime Minister and other members of the Cabinet is that of an educational advisor, and he is held responsible for execution of directives issued by the Cabinet which affect education.

The Minister's Secretary and the latter's staff are responsible for assisting the Minister in performance of his duties - many of which are ceremonial, social, cultural, and/or representational. Responsibility for coordination of program execution with other government agencies may be assigned by the Minister to his Secretary, as may duties connected with preparing speeches, answering correspondence , and writing reports.

Khuru Sapha, the teachers' professional organization, was created by law in 1945, and all government school teachers are required to become members by paying, in addition to frequent special assessments, annual dues of 20 baht (U.S. $1.00) each. This government-sponsored professional organization is officially designated: (1) to advise the Minister on methods of improving teacher welfare, (2) to consult with Ministry officials in development of elementary and secondary school curricula, and (3) to organize pre-service and in-service teacher-training programs. The Executive Board of Khuru Sapha - of which the Minister is Chairman, and the Under-Secretary of State for Education is Vice-Chairman, with all Directors-General holding membership - approves the appointment, promotion, transfer, and termination of its members. It is also charged with raising the academic standards of teachers. Khuru Sapha also publishes three monthly professional journals.

The Under-Secretary of State for Education is responsible for overall management of the national education establishment; he is the highest-ranking professional civil servant in the Ministry of Education. Whereas the Minister of Education is a political appointee and his duties are largely representational in nature, the Under-Secretary of State for Education is responsible for planning, organizing, directing, staffing, and controlling the activities of the Ministry. The office of the Under-Secretary of State for Education is composed of six divisions:

1. Central Division
2. Finance Division
3. External Relations Division.
4. Educational Information Division.
5. Cultural Division.
6. Educational Planning Division.

These divisions, together with two Assistant Under-Secretaries of State for Education and their staffs, comprise the secretariat of the Ministry.

Responsibility for operational management of educational and educational service functions rests with eight departments within the Ministry:

1. Department of Secondary Education.
2. Department of Vocational Education.
3. Department of Educational Techniques.
4. Department of Teacher Education.
5. Department of Physical Education
6. Department of Religious Affairs.
7. Department of Elementary and Adult Education.
8. Department of Fine Arts.

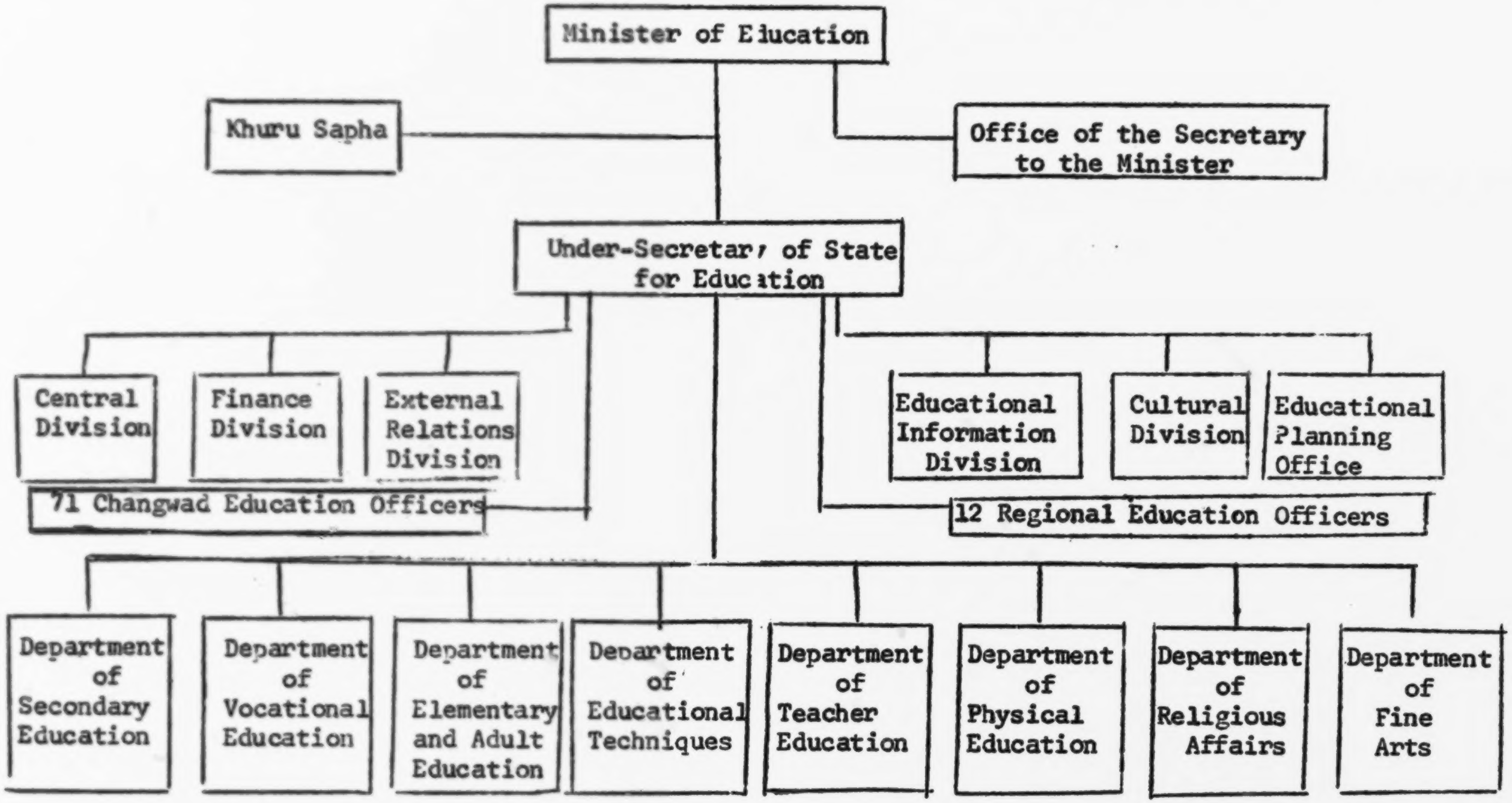
Minister of Education
Khuru Sapha
Office of the Secretary to the Minister
Under-Secretary of State for Education
Central Division
Finance Division
External Relations Division
71 Changwad Education Officers
Educational Information Division
Cultural Division
Educational Planning Office
12 Regional Education Officers
Department of Secondary Education
Department of Vocational Education
Department of Elementary and Adult Education
Department of Educational Techniques
Department of Teacher Education
Department of Physical Education
Department of Religious Affairs
Department of Fine Arts

Figure 2-1. Organization of the Thai Ministry of Education

Collectively, these departments are charged with meeting professional needs of regional, provincial, district, and local educators. Specialized staffs within these eight departments provide educational leadership, business management, technical and other services to subordinate levels. Each department is under the supervision of a Director-General who is assisted in his administrative tasks by a Deputy Director-General, Secretary, and chiefs of specialized divisions. Divisions, which vary in number from department to department depending upon the functions assigned and/or performed, are in turn subdivided into sections, each directed by a section head.

The Department of Secondary Education supervises all government secondary general or academic schools within the kingdom, and administers certain regulations dealing with the operation of private secondary schools (which enroll approximately half of all Thai secondary school students). Budget preparation, contractual arrangements for the construction of schools, provision of supplies, legal matters, collection of statistical information, maintenance of official records, supervision of curriculum, and methods of instruction are assigned to this department.

Within the Department of Secondary Education there are six main divisions:

1. Office of the Secretary.
2. Supervisory Unit.
3. Division of Educational Evaluation and Examinations.
4. Division of School Finance.
5. Division of Private Schools.
6. Division of Government Schools.

Secondary education is divided, administratively, into two streams: the general or academic stream is the responsibility of the Department of Secondary Education, while schools teaching vocational subjects are supervised by the

Department of Vocational Education. This picture is complicated by the fact that some academic or general schools administered by the Department of Secondary Education offer vocational or pre-vocational instruction, while all schools administered by the Department of Vocational Education provide instruction in academic as well as vocational subjects.

The Department of Vocational Education is charged with developing several vocational curricula, promoting acceptance by Thai youth of vocational education, and preparing students for citizenship roles. Training programs have been devised which range in subject matter from farming to skilled crafts.

Technical assistance to the various departments in development of teaching aids, textbooks, and curricula is provided by the Department of Educational Techniques. It has the additional responsibility of stimulating use of audio-visual aids and encouraging the teaching of science. Lists of books approved for use in government and private secondary schools are also prepared by this department. Ministry allocations to local schools do not provide for purchase of audio-visual aids; equipment of this kind is purchased with funds secured by the schools themselves. The Department of Educational Techniques neither produces nor stocks films, film strips, slides, tapes or records; these items, when utilized for instructional purposes, are obtained mainly by individual schools either from foreign businesses with offices in Thailand or from foreign government information agencies.

The Department of Teacher Training is responsible for (1) training prospective teachers in particular aspects of the secondary curriculum, (2) organizing and supervising in-service training programs for teachers, and(3) the preparation and administration of qualifying examinations for those teachers who wish to upgrade their academic and professional qualifications.

Among the tasks assigned to the Department of Physical Education are (1) providing instruction leading to personal safety and physical fitness, (2) providing for the teaching of health standards and the physiology of the human body, and (3) training teachers of physical education. This department is also responsible for the Boy Scout movement and the Junior Red Cross program.

The Department of Religious Affairs does not itself sponsor or supervise educational programs. Rather, it is a coordinating and service agency (1) supporting and overseeing various religious agencies, (2) managing ecclesiastical property, (3) promoting and supporting public ethics and morals, and (4) coordinating religious activities in Thailand with those in other Buddhist countries.

While administrative supervision of elementary education was recently transferred to the Ministry of Interior, a Department of Elementary and Adult Education still exists within the Ministry of Education. Before transfer of this responsibility to Interior, in 1966, this department was by far the largest in the Ministry. While the Ministry's relationship to elementary education was drastically altered by the transfer, it retains responsibility for (1) improvement of instruction (via supervision), (2) preparation of curricular materials and syllabi, (3) establishment of educational standards, (4) selection of school sites, (5) in-service training of elementary school personnel, and (6) educational planning.

The Department of Fine Arts is responsible for preserving, reviewing and disseminating information about Thai art, history, literature, customs, architecture, and artistic works associated with Buddhism. This department also manages the National Library, the National Museum, the School of Fine Arts and the School of Dramatic Arts.

Ministry supervision of schools is effected through a network of 12 educational regions and 71 provincial (changwad) education offices. Regional education officers are nominated by the Under-Secretary of State for Education and report to him. Although each regional education officer is responsible for all education in an average of six changwads, education officers in provinces under his jurisdiction have no line relationship with him. The result is that changwad education officers - and other Ministry personnel - often operate independently of the regional offices. It is assumed by Ministry officials and changwad education officers that the main responsibility of the regional education officer is administration of in-service training programs conducted for the benefit of teachers in his region.

While changwad education officers theoretically report to the Ministry through their regional education officers, this policy has never been followed in practice. Regional education officers exert no direct influence over changwad education officers.

In the absence of meaningful educational leadership by regional education officers, supervision of all local secondary school personnel in the provinces rests with changwad education officers. The functions performed by changwad education officers include budgeting, supply, personnel, and finance. They handle administrative details for government elementary, vocational, and secondary schools.

Just as each educational region is subdivided into provinces or changwads, so also is each changwad subdivided into an average of eight administrative units known as districts or amphurs. Each amphur has an amphur education officer and staff, but these officials are restricted to supervision of elementary schools, so their functions will not be outlined here.

Functioning of the Ministry

Gazing with an unpracticed eye upon the organizational structure of the Ministry as outlined previously, the Western observer is prone to liken it to the administration of education in France. Indeed they appear, in many respects, very similar in their organization. Each is headed by a cabinet minister who, by virtue of access to other national leaders and direct participation in national decision-making, is in a position to coordinate educational management with economic, political, and social development plans. Responsibility for attainment of educational goals established by political leaders is delegated to professional educators and senior civil servants, who through decisions made in day-to-day administration are in a position to rationally and efficiently pursue long-range national goals. Both France and Thailand establish national curricula, central control of teacher preparation, systems of frequent and standardized examination to control promotion of students from grade to grade, and separate streams for those intent on vocational and academic goals. In both, by virtue of their centralized control and clearly delineated lines of communication, authority, and responsibility, one would expect to find the diffusion of innovations more easily accomplished than in decentralized systems such as those of the United States and England.

Appearance - in the forms of organization charts, statements of national goals, and schemes of education - is deceiving, for the organization and administration of education in Thailand may depart widely from published organization charts and public statements of policy. While some disparity between ideal and practice is found everywhere, in Thailand the form but not the substance of legal-rational organization and administration has been adopted.

Organizational Impediments to the Diffusion of Innovation

An institution may influence the rate at which innovations diffuse, either within the organization itself or to the clientele it serves, by the diligence with which it pursues policies designed to encourage flexibility of response to a changing environment.

It is facile and perhaps natural for Westerners to assume that the Thai Ministry of Education is dedicated solely to improvement in the human condition through change. The Western bureaucratic model adopted by King Chulalongkorn and Prince Damrong in about 1892 has, since that day, been reshaped and redirected by Thai civil servants to meet the traditional and more broadly accepted need for attainment and legitimation of personal power, personal prestige, and personal status. The Thai civil service is seen by those within it as a structure whose primary function is the conferring of status, the legitimation of status, and the defense of status. While nearly all Thai bureaucrats would hold that benefit to the public should result from their efforts, any suggestion that public service might constitute the raison d'etre of a bureaucracy would probably be greeted with good-natured tolerance. The Thai bureaucratic polity exists first and foremost to serve its own ends, to confer and apportion power, prestige, and status among those members of society who are fortunate enough to find positions within it. Only in these terms, rather than as an instrument designed specifically or exclusively for public improvement through change, can the present organizational and managerial policies of the Ministry of Education be comprehended by the foreign observer.

This is not to say, of course, that change and adaptation do not take place within the Ministry. Alterations in structure and/or revision of managerial policy are frequently demanded by foreign powers as the price which must be paid for financial or technical assistance and recognition. Also, members of Thai governments have long shown an acute awareness of the fact that if they are to maintain their national independence from outside interference, they must meet certain minimal foreign expectations (Wilson, 1962, pp. 3-9).

Fortunately for those who would peer behind organization charts to determine how the Ministry is actually organized, the Thai government has encouraged research by outsiders, and Thai civil servants have been candid in response to questions posed by investigators. The present study is but one illustration of this point.

'To proceed from the general to the specific, major long-range decisions about education in Thailand are often made in the Thai Cabinet of Ministers rather than in the Ministry of Education. As professional educators and most higher ranking Ministry of Education officials lack the political power required to influence significantly Cabinet decisions affecting education, formation of overall education policy becomes the prerogative of powerful Cabinet members. Within the Ministry of Education itself, neither the Minister nor the Under-Secretary of State for Education have sufficient power to determine educational decisions unilaterally, for each department of the Ministry operates more or less autonomously.

The Ministry of Education had, until 1964, lacked any official machinery for coordinating long- or short-range planning. In the absence of clear-cut objectives which might require planning for their attainment, this shortcoming had not been sorely felt. The marked lack of educational objectives - and planning capacity to effectuate such objectives - has served to obscure the fact that, as presently constituted, the Ministry is almost totally lacking in machinery to effectively coordinate programs cutting across departmental lines. Meetings and conferences are endemic, but clear-cut decisions are rare. Political behavior frequently dominates such meetings, and decisions when reached tend to reflect friendship or an exchange of favors. The Thai humorously refer to this as "whiskey-soda coordination."

Finally, and most importantly, such meetings often become a device for dispersing, and hence reducing, personal responsibility for decisions.

Within departments, divisions, and sections, new projects are frequently assigned to ad hoc units created specifically to administer them without provision for their permanent integration into ongoing and closely-related programs of the organization. To cite examples, there exist within the Department of Secondary Education a Project Coordinating Unit, a Canadian Loan Project Unit, an Agricultural Education Project, and a Comprehensive School Project. None of these ad hoc projects or their staffs has official recognition outside of the Department itself, all have implications for programs within existing divisions of the Department, and none are being coordinated with one another or with ongoing programs.

As the Department of Educational Techniques is responsible for diffusion of three of the innovations chosen for study in the present research project, a closer examination of the organization of this unit may help to clarify the organizational and administrative obstacles confronting the diffusion of educational innovations in Thailand.

The Department of Educational Techniques is the center for developing techniques of instruction in the Ministry. It has responsibility for conducting certain types of educational research, for organizing syllabi, for producing and standardizing textbooks, for authorizing textbooks to be used in schools, and for producing educational equipment and learning aids for schools.

Both the Educational Aids Division and the Educational Materials Center within the Department of Educational Techniques acknowledge responsibility for diffusion of the books, materials, curricula, and syllabi produced by them, but no official recognition of this role is to be found. The organization chart of the Department makes no provision for a unit with such responsibility.

Interdepartmental committee meetings, publications and personal communication with supervisors, changwad education officers, principals, and teachers are the only channels of communication available to disseminate knowledge of the new materials available. Discussions with Ministry personnel in the provinces disclose that many, if not most, are unaware of materials (other than textbooks and syllabi) available from the Department.

The Department lacks a formal means of evaluating the effectiveness of syllabi and texts it produces and distributes. It also is without means of trying out its products on an experimental basis and subjecting them to objective analysis before official recognition is conferred on these new materials.

The impediments to decision-making and the diffusion of innovations created by the organizational and managerial practices in the Ministry are formidable. An absence of explicit educational objectives renders it nearly impossible for Ministry personnel to engage in meaningful long-range planning. Much as planning assumes objectives, so coordination assumes planning.

The diffusion of innovations in a milieu such as that described suggests that the visibility of adoption or non-adoption of an innovation may greatly affect its rate of adoption. If the "powers" push adoption of school libraries or encourage formation of Boy Scout troops, failure of schools to adopt these innovations is easily determined by visual inspection. Non-adoption of the discussion method of instruction or assignment of reading in library books, on the other hand, is more difficult to detect.

To summarize the organizational and managerial impediments to the diffusion of innovations found within the Ministry of Education:

1. Educational decisions are often made by the Cabinet, with the result that the views of the Minister of Education and of other professional educators within

the Ministry do not always govern decisions affecting the future development of education in Thailand. Decisions such as that to transfer responsibility for elementary education from the Ministry of Education to the Ministry of Interior have been made by the Cabinet on the basis of political calculations, rather than on the basis of rationalizing the goals of education.

2. Managerial and organizational policies for administration and evaluation of education in the provinces are often weak and ineffectual. By circumventing regional education officers, the Ministry Secretariat violates the logic of a direct and narrow span of control. Seventy-one changwad education officers theoretically report directly to the Under-Secretary of State for Education; in reality, these officials find ample room for autonomy of operation and freedom from supervision of secondary education within their changwad. Some changwads have no secondary education supervisors assigned to their staffs, and thus a communication link for the diffusion of educational innovations from the Ministry offices in Bangkok to the provinces is cut. Secondary education supervisors assigned to the staffs of regional education officers might theoretically fill this diffusion gap, were it not for the fact that they are administratively isolated, and their number is too small to accomplish the task.

3. Ministry executives are unable to monitor the extent to which operating units do or do not comply with their directives. For example, a changwad education officer who is requested by his superior to improve library facilities in his province is unlikely to report noncompliance. In the absence of evaluation, he can report compliance when such is not the case. Ministry officials in Bangkok contend that regional and changwad education officers have established audio-visual centers from which schools may borrow moving picture projectors, slide projectors, tapes, films, film strips, and slides. But personal inspection by the Project research

staff of many such offices indicated not one audio-visual lending service. Secondary school principals, especially those whose schools are located at some distance from the changwad office, enjoy as much independence from supervision as do the changwad education officers themselves. While many changwad officers attempt to visit each school under their supervision at least once every two years, others do not even exert this minimum effort. As a result of the unwillingness or inability of changwad education officers to diffuse information about innovations or to assess the extent of their use, this important communication and feedback link between Bangkok and local schools carries few innovation messages.*

4. Certain personnel policies are dysfunctional. One hears it said of Thai bureaucratic behavior that the civil service contains provision for reward but not for punishment. The fate which confronts an incompetent or ineffectual government employee is transfer to another, supposedly less crucial, post. Operating in conformance with the rules of a bureaucratic polity, ineffectual teachers, school principals, supervisors, changwad education officers, and other Ministry employees are allowed to serve in the bureaucracy until retirement and/or qualification for pension. Conversely, talented teachers, principals, and provincial and regional personnel generally find it possible to obtain transfers which take them to larger population centers, eventually ending up with a Ministry post in Bangkok. The effect of this movement by talented personnel away from the villages and toward the capital is to leave the education of children in the hands of those least qualified

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*In a mimeographed report issued recently by the United States Operations Mission, Thailand (no date), it was reported that 24 elementary education supervisors in the three changwads of Ubon, Sakon Nakhon, and Nakhon Phanom each have an average of 100 schools and 336 teachers to supervise. To accomplish this supervisory task they are allotted the sum of 10 baht (U.S. $0.50) per school year. Comparable figures for support of secondary school supervision are not, unfortunately, contained in this report.

to perform this important task. Meanwhile, those who might improve the quality of education in Thailand's classrooms are attracted to higher status but functionally sterile positions in Bangkok. Were Ministry, regional, or changwad offices organizationally structured to utilize more fully the talents of these more qualified personnel, a net gain for education could be expected as the result of such movement, but new arrivals from the provinces to central administrative positions soon learn that conformance to traditions, rather than the innovativeness which may have helped them gain their new position, is the road to survival and further promotion.

Communication and Feedback Channels

Within the Ministry of Education, as in any large bureaucratic organization, formal channels of communication transmit only a small proportion of the total communication load.

Records maintained by offices at every level in the hierarchy carry perhaps the heaviest share of official information. While much useful information is transmitted via this channel, much of the record-keeping represents only an attempt by subordinates to record compliance with directives from above, in case questions may later be raised.

Personal inspections are used in many bureaucratic organizations as a means for higher-ranking officials to seek feedback information. Thai civil servants often carry out such inspections, but more often to transmit than to receive intelligence. Such government officials in the field tend to talk rather than to listen. As a general consequence, the Thai Ministry of Education tends to suffer from an insufficiency of feedback messages, especially those dealing with negative feedback.

A communication channel, perhaps unique for the sheer volume and diversity of information (and misinformation) it carries, is the ubiquitous grapevine. This far-flung network is very likely a model of its kind in the world, reaching from

Bangkok to the remotest village and abetted by the fact that Thais appear to be both keen observers and inveterate gossips. Within the Ministry, changwad education officers must come to Bangkok monthly for the purpose of picking up the pay of school principals and teachers. This provides an ideal opportunity for the collection of information in the national capital for transmission to the province. The communication efforts of these officials are bountifully supplemented by those of traveling supervisors and other personnel from the central office. As each school principal must journey monthly to the provincial capitol to receive his pay and that of his teachers, he serves to further diffuse information gathered in Bangkok by the changwad education officer. There is thus a two-step flow of rumors and information.

Ministry-planned and sponsored visitation by school principals and teachers to model or pilot schools to observe innovations is reportedly being used on a limited scale. The United Nations Pilot Project at Cha-Choengsao was the first large-scale Ministry use of this communication channel. Large numbers of changwad and amphur education officers, school principals, and teachers were brought by train and bus from all parts of the kingdom to view the Cha-Choengsao experiment.

Two of the most effective channels of communication for transmission of change messages appear to be educational journals and in-service training programs. In addition to ten officially recognized journals devoted exclusively to information about educational ideas, a number of regional and changwad education officers now publish their own journals for distribution to teachers and principals in their areas. In-service programs are used increasingly by changwad education officers to facilitate the transmission of messages from Bangkok to teachers and principals under their jurisdiction.

Information flow from lower echelons of the Ministry to decision-making centers consists of reports, records, and personal observations. Generally speaking, the Ministry appears to lack a mechanism for digesting and using the feedback data contained in the mountains of records and reports which it regularly receives from lower echelons.

In the nearly total absence of officially-sanctioned means for expressing their frustrations and airing their problems, educational personnel in large numbers resort to the accusatory, anonymous letter. Such messages reportedly emanate in impressive numbers from every level in the bureaucracy. They are most frequently addressed to those occupying positions of high status in the Ministry - up to and including the Minister. Such letters undoubtedly provide these officials with considerable information about conditions in the field, and may constitute a channel of greater functional utility than the officially kept and duly submitted records.

Chapter III

RESEARCH DESIGN AND DATA-COLLECTION

Research Design

It was determined in the early stages of research planning that the present study would consist of a correlational analysis of survey data, rather than follow an experimental approach. This choice necessitated that data be gathered from a large sample of respondents who would be selected to represent the larger population from which they were drawn. Self-administered, pre-coded questionnaires were employed to obtain these data; personal interviewing was not used because (1) the sample size was large, (2) trained Thai interviewers in sufficient numbers were not available and could not be trained in the time available, and (3) the cost of personal interviews was beyond the amount budgeted for data-collection.

Three separate questionnaires were developed: one each for the sample teachers, the school principals, and the changwad education officers. Additional data from Ministry officials was procured by means of personal interviews using a relatively unstructured approach.

The innovations selected for study were selected according to the following criteria:

1. Some innovations studied should reflect system (Ministry) and school (principal) adoption decisions, which, once made, would _require_ compliance by subordinate units (schools) or individuals (teachers), while other innovation decisions would _not_ be of such nature.

2. Some innovations adopted by subordinate individuals or administrative units should _require_, as a pre-condition, prior adoption by a superordinate individual or agency, while certain other innovations adopted by subordinate individuals or administrative units should _not_ require, as a pre-condition, prior adoption by a superordinate individual or agency.

3. The adoption of certain innovations by the school as a decision unit should require, as a pre-condition for individual teacher adoption, expenditure of non-appropriated school funds, while adoption of certain other innovations by the school as a unit should not require, as a pre-condition of individual teacher adoption, the expenditure of non-appropriated school funds.

4. The adoption of certain innovations by individual teachers should require that they learn to manipulate or operate mechanical devices (such as audio-visual equipment), while adoption of certain other innovations by individual teachers should not require that they learn to manipulate or operate mechanical devices.

5. The adoption of certain innovations by individuals and/or administrative units should represent a very marked departure from traditional (pre-World War II) educational practice, while adoption of certain other innovations by individuals and/or administrative units should represent only a slight departure from traditional educational practice.

6. Further, certain educational innovations were to be selected which had been known in Thailand for many years (about 10 to 13), while others studied were to have been introduced much more recently.

With these criteria in mind, a four-man panel* identified ten educational innovations which became the central object of our study. Two, use of secondary school libraries as a teaching-learning resource and coeducational organization of government academic secondary schools, were purposefully selected for study in greater detail than the remaining eight. The data-gathering instruments would have been prohibitively long had all ten innovations been studied in equal depth, so it was decided to probe deeply for data about adoption of only two of the ten new ideas selected. Table 3-1 lists the ten innovations selected for study, classified on the basis of the criteria enumerated previously. Following is a description of each of these innovations, together with (1) the approximate year of introduction, (2) the reported means by which it was introduced into the system (its sponsorship), (3) the channels reportedly employed to diffuse the innovation, and (4) some comments on how each innovation was employed in the schools visited by the Project research staff.

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*The panel consisted of authors Rogers, Leu, Lin, and Mortimore.

Description of the Innovations

1. Class Discussion Method of Instruction: This innovation is defined as the solicitation by teachers of student participation in the classroom in a two-way exchange of information and views on the subject matter being taught, with the intent of encouraging and developing among students (1) analytical thought, (2) problem-solving ability, and (3) the ability to express themselves clearly, concisely, and forcefully.

Reflecting, in part, continental European influence, the Thai educational system traditionally relied almost exclusively upon the lecture as a means of instruction. Students are required to keep extensive notes on lectures given by teachers, and having committed these to memory, to recite information verbatim when called upon. Important rites of passage, such as the Maw Saw 5 (school leaving), university entrance, and civil service examinations, are largely tests of the individual's rote memory and only infrequently measure his ability to reason or apply facts to solution of concrete or hypothetical problems.*

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*Our interviews with Thai informants disclosed that most teachers and principals perceive their chief responsibility to be the preparation of students to pass examinations which largely measure the pupil's grasp of "facts."

Table 3-1

The Educational Innovations Studied in Thailand

	Class discussion method	Objective tests	Use of library	Audio-visual aids	Coeducation	Peace Corps volunteer teachers	Guidance counseling	Vocational education	Parent-teacher associations	Organization into departments
1. System or school management decision requiring compliance by individual teacher					X	X	X	X	X	X
2. Adoption by individual teacher requires prior adoption by supordinate unit or individual			X	X	X	X	X	X	X	X
3. Adoption by individual teacher does not require prior adoption by superordinate unit	X	X								
4. Teacher adoption requires expenditure of nonappropriated funds		X	X	X		X		X		
5. Teacher adoption does not require expenditure of nonappropriated funds	X				X		X		X	X
6. Teacher adoption requires operation of mechanical devices		X		X				X		
7. Teacher adoption does not require operation of mechanical devices	X		X		X	X	X		X	X
8. Adoption represents very marked departure from traditional practice	X	X				X		X	X	
9. Adoption represents moderate departure from traditional practice			X	X			X			X
10. Adoption represents only slight departure from traditional practice					X					
11. Innovation introduced before World War II			X		X					
12. Innovation introduced after World War II but before 1955	X			X				X	X	X
13. Innovation introduced since 1955		X				X	X			

One explanation for the traditional reliance upon lectures and memorization in the classroom is to be found in the shortage of printed textual material. Thus, there is often no alternative to the lecture as a means of conveying factual curriculum content. More important as an explanation for the use of the lecture method is the inadequate preparation of government secondary school teachers, over half of whom are unqualified by Ministry standards to teach the courses for which they are responsible. Lastly, reliance upon lectures and memorization would seem to accord well with the Thai cultural norm which places a high value on deference to one's elders - in this case, deference of pupils to their teachers. This value orientation makes it difficult for Thai teachers to accept with equanimity a challenge to their views (authority) by pupils during the course of classroom discussion.

Reliable information about the introduction and diffusion of this innovation proved extremely difficult to obtain from Ministry of Education officials. Most of those interviewed indicated that first use of class discussion dated from sometime shortly after World War II. Genesis of the innovation was traced to the return of Thai educators from the United States, where those sent following World War II first observed class discussion in practice. Two informants felt that the establishment of the College of Education at Prasarn Mitr in 1954 - patterned on the American model and ushered into existence under terms of a ten-year program carried on by U.S. AID and Indiana University - marked the first exposure of Thai teachers in significant numbers to class discussion. Both Indiana University faculty members teaching at Prasarn Mitr and Thai personnel trained at Indiana University who later returned to teach at Prasarn Mitr, reportedly employed the discussion method extensively in an attempt to demonstrate its strengths and procure its acceptance by others. While no one Thai in particular was identified as a champion of this instructional method, informants were unanimous in reporting that its use at Prasarn Mitr in training future teachers and school administrators represents one of the most important means of diffusion. Several informants could recall having read articles in Thai educational journals about classroom discussion.

Although 62 percent of our sample teachers in Thailand indicated that they employ classroom discussion as an instructional method, its use was only infrequently observed while visiting sample schools. The instruction encountered was, for the most part, quite formal with little opportunity for student participation beyond a kind of "choral response" and individual recitation. Only 13 percent of the sample teachers had attended Prasarn Mitr College of Education, where they probably participated in classroom discussion themselves. This discrepancy between reported use of the discussion method by teachers, on the one hand, and our observation of actual classroom behavior on the other, suggests that this instructional technique is employed only sparingly, but by a high percentage of teachers.

2. Use of Objective Tests: Objective tests are defined as those which employ questions requiring pre-determined forced or multiple-choice responses. They largely are used to replace essay-type questions on examinations. The purported advantages of objective questions are ability to more widely sample the total range of material taught and greater objectivity of scoring.

This innovation was introduced by UNESCO specialists working with Cha-Choengsao Pilot Project schools no earlier than 1950-51. Two Thai educators who have been closely associated with objective testing are Dr. Paiboon Ratanamangala and Dr. Chawan Paratagul, both of whom received their graduate education in the United States. Dr. H. Coulthard Burrow, a UNESCO specialist in English language instruction, was a foreigner influential in diffusing information about this innovation.

Dr. Paiboon, then principal of the experimental boys secondary school at Cha-Choengsao, organized a training seminar at Bang Saen College of Education in 1954 which was attended by 200 secondary school principals and had as its major aim the diffusion of information on objective testing. During the school vacation period in 1955, Dr. Paiboon, with the assistance of Dr. Burrow, organized another training session for school principals. All 333 principals of government secondary schools were invited to this meeting dealing with objective tests, which lasted 12 days and was held in Bangkok at Triam Udom Suksa School. The papers presented at this conference of school principals were assembled into a lengthy report which contained, in addition to an extensive bibliography, examples of objective tests developed to measure pupil achievement in Thai language, English, mathematics, social studies, and several other subjects. The intent of the conference planners was that the principals would return to their respective schools and train individual teachers in the use of objective tests. This goal, informants felt, was not achieved. Many principals attending the 1955 conference made no effort to convene meetings of teachers to explain what had transpired at the summer conference. The conference proceedings probably found their way into the personal libraries of the principals and, with only a few exceptions, never reached the school teachers.

Mr. Chawan, now a faculty member at Prasarn Mitr College of Education has devoted nearly all of his time to the measurement of achievement using objective tests. His text - in Thai - on tests and measurement is used at Prasarn Mitr College in all courses dealing with this subject. Numerous articles, written by Dr. Chawan, Dr. Sampong Siri-Jaron, and Dr. Paiboon dealing with objective testing have appeared in educational journals.

The Ministry's Department of Secondary Education appears to have played a very passive role in diffusing objective testing techniques. In-service training programs dealing with this subject were held in some provinces, but with little initiative from the Department. Ministry officials, questioned about this apparent lack of diffusion activity, convey the impression that they perceived the initiation of such programs to be mainly within the jurisdiction of regional and changwad education officers.

One Ministry official, when asked why objective tests appeared to be used so infrequently by classroom teachers, replied that their use requires teachers to first obtain paper and mimeo stencils - for which there is no provision in the school budget. Then they must type the stencils (assuming that the teacher knows how to type) which is time-consuming, and then operate the mimeograph machine (assuming that the school possesses one in working order). The Maw Saw 5 examination - which is in part objective - is prepared by the Ministry, but administered by teachers.

3. Use of the School Library as a Teaching-Learning Resource: This innovation is defined as the requirement by teachers that students read assignments from books in the school library.

The first secondary school library was reportedly established in 1907 at King's College, a palace school maintained for children of the Royal Family. In 1952 the Ministry of Education adopted the policy that all government secondary schools should establish a library. Rejabapit School in Bangkok is identified as the first government secondary school in Thailand actually to require regular use of the library by students.

In 1956 the Department of Secondary Education appointed, for the first time, a library supervisor. The woman chosen for this position, Miss Ranjuan Intera-Kamhang, had just returned from the United States where she received an M.A. degree in library science. Miss Ranjuan reports that at the time of her appointment there was little understanding of, or interest in, libraries as teaching-learning tools among Thai teachers.

Also in 1956, the Ministry of Education and U.S. AID embarked on the General Education Development (GED) program, a ten-year project to improve education in the provinces. Under this program, secondary schools in Chiengmai, Yala, and Ubon Provinces received financial support for improvement of their libraries. By 1958, Miss Ranjuan reports, libraries in these government secondary schools had been improved to the point that they constituted effective teaching-learning facilities.

Upon recommendations contained in a report by Dr. Norris A. Gelfand (UNESCO library specialist), the Ministry of Education in 1962 established a Library Committee. While the Library Committee has not been especially effective and meets infrequently, some recommendations originating with that body have come to fruition - including one suggesting that teachers receive credit toward certification as a result of courses completed in library science. The Under-Secretary of State for Education is chairman of this committee, and the Directors-General of all departments are members.

The Library Association of Thailand, a non-governmental voluntary association, has promoted improvement of government school libraries since 1955. The Association publishes a bi-monthly Library Bulletin, sponsors an annual meeting attended by librarians from throughout the kingdom, encourages formation of Association chapters at the changwad level, sponsors a traveling book display reaching twenty changwads each year (begun in 1964) and offers, in cooperation with the Ministry of Education, a nine-day in-service training program in library work for government school teachers. After completing three of these nine-day in-service training programs, the participating teacher is awarded a certificate of completion. Approximately 1,500 teachers have reportedly received such certificates. The Library Association of Thailand has now joined with Khuru Sapha to sponsor library science training programs at regional education centers. These programs, usually of two weeks' duration, are most frequently offered during the summer months when schools are not in session.

Government schools do not receive Ministry funds for the purchase of library books, so they must rely upon gifts and special library fees collected from students for acquisition. Stringency of Ministry appropriations is also directly responsible for the fact that, with few exceptions, secondary schools cannot hire full-time librarians. Teachers with instructional responsibilities are appointed to supervise the library on a part-time or overload basis.

Respondents expressed the opinion that most secondary school teachers - especially older teachers - do not know how to use the library as a teaching-learning resource, having infrequently been required to use libraries in the course of their own education. Citing the lack of Western-trained librarians and library science educators, some respondents feel that it will be many years before substantial numbers of secondary school students will use library books as a significant element of their education.

Among the schools visited, the adequacy of libraries varied widely. In smaller, rural schools, the library frequently consisted of only popular magazines and a few books piled in one corner of a classroom. In other schools, large numbers of books were neatly filed on shelves, and classified by subject matter. Generally, libraries, whether large or small, were poorly patronized. Many librarians appeared to prefer that books remain neatly shelved rather than to encourage their circulation. The library in one of our sample schools included a card catalog and a record of book usage.

Many of the books found in school libraries are popular fiction and are of little apparent use as reference works for courses. Most magazines appeared to be of the lurid, popular variety; these are heavily read by students and faculty alike. Several schools have extensive holdings of books written in English, but these are little used because many teachers and students do not have sufficient command of the language to read them profitably. Our examination of the English language books disclosed few signs of use.

4. Use of Audio-Visual Aids: Because certain audio-visual aids such as maps, charts, globes, and printed pictures had been employed in Thai schools for a number of years, it was decided to restrict the present definition of the innovation to taped and recorded materials, moving pictures, slides, and film strips.

These audio-visual aids were reportedly first used on a large scale in the UNESCO-sponsored adult education program begun in 1950 at Cha-Choengsao. Because of the fact that a large number of school teachers from throughout Thailand observed this experiment, instructional use of audio-visual aids received wide exposure. The United States Agency for International Development, in 1950, inaugurated a health education program, which made extensive use of films.

Prasarn Mitr College of Education in Bangkok has for some years maintained an audio-visual training center, and offers a course to prospective teachers on the use of such materials and equipment. The Ministry, through its Department of Information, has conducted several regionally-based in-service seminars to familiarize teachers with use of electronic audio-visual aids. Although each changwad education officer was directed by the Ministry to establish and maintain an audio-visual center for the training of teachers, none of those visited had actually done so.

Most films, film strips, slides, tapes, and records used by government schools are provided by the United States Information Service, private foreign firms, or foreign consulates. The Ministry of Education itself does not produce films, film strips, slides, tapes, or records, nor does it provide equipment (nor money to purchase equipment) necessary for the use of slides, films, etc.

Mr. Sanan Patamatin, who holds an M.A. from Indiana University, has authored a book on the use of audio-visual aids, and is generally credited with having exercised more influence than any other Thai in the popularization of audio-visual aids. Mr. Sompong Sirijaron is also mentioned as having been influential regarding this innovation. Both of these men have published articles dealing with the subject in various educational journals.

Our 38 sample schools possessed the following total inventory of audio-visual material and equipment: three radios, eight slide projectors (one in each of several separate schools and two in one school); 150 35 mm. slides (one school with 50 and another with 100, purchased locally); five 16 mm. moving picture projectors, 25 tape recorders (several schools possessed two, and two-thirds of the schools owned none); six magnetic tapes (one school possessed five tapes of music and one school possessed one English language tape). None of the schools visited owned moving picture films and none possessed an overhead projector. Two of the five moving picture projectors were inoperative, and had been for some time. Most of the numerous tape recorders were reportedly used exclusively to play music during assemblies or at noon recess.

When questioned regarding problems concerned with the use of electronic audio-visual equipment, several principals listed the high cost of equipment as of primary importance. Many indicated that unavailability of slides, films, and tapes rendered the equipment uneconomical. Most of the materials (films, tapes, and slides) available through the United State Information Service, the principal source, reportedly deal with the "Communist menace" and so are of limited instructional value. Most principals felt that their teachers would try to make greater use of visual equipment and materials if they were readily available. Many indicated, however, that their teachers would need training in the use of such equipment and materials, if they were to be used effectively.

5. Coeducational Schools: Prior to World War I, many elementary and secondary schools built with government funds were coeducational. Because of British influence in Thailand (attributable in part to the fact that many upper-class Thais were at this time educated abroad), preference developed in the 1920's for secondary schools which separated the sexes. Therefore, separate schools for boys and girls became common in provincial capitals.

At the urging of Dr. Willis Porter, a professor from Indiana University, the Ministry of Education begain to reconsider its position on separate secondary schools in about 1950. With Mr. Sewat (Director-General of the then General Education Department) dissenting, the Ministry decided that all secondary schools in amphur capitals would be coeducational. This decision was reportedly based primarily on financial considerations, rather than on any widely held conviction that coeducation was inherently superior. A continuing shortage of teachers also played a significant role in the decision to establish coeducational schools in amphur towns. The first coeducational teacher-training institution in Thailand was opened at Chiengmai in about 1950.

The decision to support and encourage coeducational secondary schooling was reportedly made by the Education Council, comprised of the Minister of Education, the Under-Secretary and Deputy Under-Secretaries of State, and the Directors-General of Education.

Many schools that are reported by the Ministry as enrolling only boys or girls are actually coeducational. Males in many provincial capitals who wish to enroll in the arts stream attend schools officially designated as "girls" schools, while female students wishing to enroll in the science stream frequently attend schools officially designated as "boys" schools. Enrollment figures from such schools may well indicate that the dividing line between coeducational and separate schools in changwad cities is actually becoming increasingly blurred.

In all of the coeducational secondary schools in our sample, boys and girls were seated separately in the classroom and at most extracurricular activities. Feelings toward coeducation on the part of principals appear to be mixed. There is a tendency for those educated in segregated institutions to prefer that form of organization. Those who support coeducational enrollment frequently do so on the grounds that students tend to be better behaved when in the company of the opposite sex.

6. Use of Peace Corps Volunteers: The decision to request American Peace Corps volunteers for use in Thai schools was made by the Cabinet in 1961, and the first volunteers arrived in 1962.

Assignment of Peace Corps volunteers to requesting schools is the joint responsibility of Peace Corps-Thailand and the Peace Corps Coordinating Office, located in the Ministry of Education. Many more schools request the service of Peace Corps volunteers than can be accommodated. Peace Corps-Thailand reportedly prefers to assign volunteers to amphur schools where they supposedly receive "greater exposure" to the "real" Thai environment, while the Ministry apparently prefers their assignment to changwad schools, where a larger number of Thai students would be exposed to English by native speakers.

Diffusion of information about the role of Peace Corps volunteers has taken various forms. Thai employees of the Peace Corps Coordinating Office have addressed meetings of teachers, school principals, and changwad education officers. Thai-language newspapers have carried stories on the work of volunteers. Peace Corps regional representatives reportedly hold frequent discussions with both those principals who have and those who desire volunteers.

We observed that Peace Corps volunteers experience a wide range of problems and rewards. Many feel they could be more effectively used, but nearly all express enjoyment in their work. Although many of the principals now without volunteers would welcome them in their schools, two secondary principals admitted that the presence of these Americans created problems of an unusual nature. Several principals indicated, however, that the volunteer at their school contributed to overall school program effectiveness. Especially among younger teachers, the Peace Corps volunteer can apparently have a dramatic and far-reaching effect upon willingness to experiment with new ideas.

7. Guidance Counseling: Guidance counseling is defined as provision of vocational guidance in the school. It was introduced in 1958.

United States Agency for International Development personnel reportedly influenced consideration of the importance of guidance counseling in the Scheme of Education, a Ministry of Education publication setting forth the curriculum and administrative structure of Thai education. Mrs. Pranee was reportedly the first Thai sent to the United States for the express purpose of studying vocational guidance. Mr. Nam Boonsit followed shortly thereafter and is now employed by the Department of Vocational Education. Sawat Naree Wittaya in Khorat was reputedly the first government secondary school in the kingdom to organize a guidance counseling program.

The first in-service teacher-training program devoted specifically to the topic of vocational guidance was sponsored by the Supervisory Division in June 1966. Both Prasarn Mitr College of Education and Chulalongkorn University, however, have offered pre-service elective courses in guidance counseling.

One relatively high-ranking Ministry official considers many vocational counselors "inadequate," noting that those who choose or are chosen to perform this function may elect to take no more than one poorly-taught course in the subject. This same official expressed the view that "no one in either the Ministry of Education or the Ministry of Finance is sufficiently knowledgeable about the Chinese business community to determine trends and needs there; given the near monopolization of commerce by Chinese businessmen, such knowledge is indispensable to any meaningful...vocational guidance in the secondary schools." Teachers designated to perform the counseling function have at their disposal very little if any of the materials and information required to counsel adequately. The Ministry only provides materials and data needed by counselors, such as employment information, on a very limited basis.

Based on our field observations and discussions, it appears that vocational guidance counselors lack the necessary training and information to perform their task adequately. Although 11 of the 38 sample school principals claimed their school offered vocational counseling, only two counselors had undertaken special training in this area; one had enrolled in two counseling courses at Prasarn Mitr College of Education ond the other had attended a ten day in-service institute. In many cases the principals reported performing the guidance function themselves. In four of the schools visited, a counseling room had been designated and furnished with a desk and chairs. In none of the four, however, were there any of the reference materials required by a vocational counselor.

8. Vocational Education: This innovation is defined as the provision of vocational or pre-vocational crafts and/or skills education designed to prepare students for employment in a specific vocational field.

Vocational and pre-vocational programs carried on through the government school system of Thailand have, according to testimony provided by educational officials, traditionally suffered from lack of widespread public acceptance and from a history of unreliable government support. The feeling is apparently widespread among Thai parents and students that vocational education is necessarily an inferior type of education; the fact that education officials have done little to overcome this prejudice, except perhaps on those occasions when substantial foreign grants were available to finance vocational programs, has done little to change the public image.

In 1950, the first post-war effort to encourage development of vocational and pre-vocational education at the secondary school level was launched with funds provided by UNESCO. The Cha-Choengsao pilot project is now generally considered to have failed because of: (1) its lack of clear-cut goals, (2) poor and/or inadequate planning by UNESCO and Ministry of Education officials, (3) poorly trained staff, (4) lack of appropriate equipment, and (5) lack of support from the Thai government (Nairn, 1966).

In 1957 another "experimental" pre-vocational program conducted in government secondary schools was launched. This effort, designated as "General Education Development," was sponsored jointly by the United States Agency for International Development and the Ministry of Education. Four secondary schools in Bangkok plus numerous provincial schools were involved in this ten-year project. American specialists assigned to work with this experimental program concede that many of the anticipated objectives were not attained.

A third very large and heavily-financed vocational and pre-vocational program recently was launched with UNICEF support. Several of our sample schools are participating in this project, but on the basis of our observations the probability of successfully preparing Thai students for entry into semi-skilled employment seems slight. Teachers selected to instruct pupils in vocational subjects have not been adequately prepared for this task and they generally disdain handling tools and equipment, being extremely conscious of their status as "educated men." Consequently, students are not instructed in the use of materials but are taught about the use of equipment. One shop class was observed in which students were drawing pictures of hammers, chisels, screwdrivers, saws, etc., in copy books, and labeling each with its proper designation. At another school the corrugated metal roof had blown off the newly erected shop building during high winds six months previously. Exposed to the elements, a great deal of expensive equipment (lathes, drill presses, electric saws, power drills and many hand tools) was rusting. When the vocational teacher was asked why he and the students had not used the tools and materials available to reattach the corrugated metal roof, he replied that the idea had never occurred to him. He and the principal had requested (through government channels) carpenters to reattach the roof, but had taken no action to accomplish the job themselves.

While vocational and pre-vocational education for boys at the secondary level leaves little room for optimism, instruction in domestic arts for girls appears to be much better organized and staffed. Cooking and sewing classes appear to be well taught and the results of student effort are everywhere apparent. Such classes are taught by female teachers who, even though educated, have apparently not found the performance of domestic arts below their dignity. The Department of Vocational Education does offer two-week in-service courses - during the summer months - to train vocational teachers. A longer course in vocational education is offered at Bangphra Teacher Training College. Ministry interest in vocational and pre-vocational education appears to be activated only by the prospect of external financial assistance. Ministry interest in vocational training has tended to evaporate rapidly with the termination of outside aid. Successive projects have not appeared to build upon lessons learned from previous "experiments."

9. Parent-Teacher Associations: The parent-teacher association was brought to Thailand, according to Mrs. Krongtong, by a Ministry of Education official who had visited the U.S. in 1955. This official later provided a group of secondary school principals from Bangkok with a description of the P.T.A. as he had observed it in operation abroad. When Mrs. Krongtong visited the United States in 1956 she discussed the P.T.A. with several American educators and, upon her return to Thailand, she attempted to establish a P.T.A. in the school of which she was then headmistress. This attempt failed, she believes, because of insufficient interest among parents. In 1957 she established a P.T.A. at Satri Wittaya and, because the parents of the students were better educated, this P.T.A. continued to function.

Since 1960, principals from several schools in Bangkok and from about 20 different provinces have visited Satri Wittaya to observe and discuss the P.T.A. organization at that institution. Mrs. Krongtong, informal leader of the P.T.A. movement in Thailand, has appeared on both radio and television to describe the P.T.A. and its functions. Mrs. Krongtong estimates, however, that despite her efforts to engender national enthusiasm for the formation of P.T.A.'s, there are only "two or three other secondary schools in Bangkok and one in the provinces with really effective parent-teacher associations." There is no national P.T.A. organization in Thailand, and neither the Ministry of Education nor Khuru Sapha has shown interest in forming a nationwide federation.

Only younger educators seem to demonstrate any significant degree of interest in the formation of P.T.A. chapters. No professional journal articles have appeared describing parent-teacher associations, and the first special meeting of professional educators to discuss the innovation has yet to be called.

10. Departmentalization of Government Secondary Schools: Very little information could be obtained from Ministry of Education officials regarding this innovation, and it is not perceived to be of much importance by them. The Ministry now recommends that any school with more than 18 teachers and/or any school employing more than three teachers to teach any one subject should be organized in departments. Ministry officials feel that more schools should departmentalize and that such reorganization should move more quickly than it has.

Since 1950, yearly seminars for changwad education officers have been convened by the Ministry to upgrade the administrative and organizational skills of these officials. At such meetings, departmentalization and its merits have been discussed. Courses in educational administration taught at Prasarn Mitr College of Education also give considerable attention to the innovation.

Numerous articles in professional education journals have appeared explaining the necessity for school departmentalization. In discussions with our sample school principals, this innovation aroused little interest except among those administering schools employing more than 20 teachers.

Sampling Procedures

Using a table of random numbers and a list of all government academic secondary schools in Thailand provided by the Ministry of Education, a random, stratified, proportional sample of schools was drawn. All vocational secondary schools and private secondary schools were purposely omitted from the sample.* The 38 academic secondary schools selected for inclusion in our sample (8.6 percent of the total in this category in the kingdom) employ 732 teachers

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*A methodological caveat should be noted: as we have just indicated, schools - not individual teachers - constitute the units of random selection for inclusion in the sample. In each sample school, all teachers present and the principal were administered questionnaires. Moreover, in order to obtain a stratified and proportional sample of teachers, random selection of schools within any one given geographic region of the kingdom (Northern, Central, etc.) was used only to that point where the number of teachers employed therein reflected the proportion of teachers employed by all government schools in that region to the total of teachers employed by such schools throughout the kingdom. To illustrate this sampling procedure, 20.2 percent of all government academic secondary school teachers are employed by schools in the Central Region; the random selection of schools located in this Central Region was discontinued at that point where the number of teachers employed by the schools thus far selected equalled, or nearly equalled, 20.2 percent of the total sample size. While use of this sample selection procedure would appear, on the surface, to favor inclusion of teachers employed by larger urban schools, a test of mean school size shows that such is not the case; sample schools employ a mean of 19.2 teachers, while the national mean for government academic secondary schools is 20.1. Significance levels for correlation coefficients are based on the assumption of a random sample of teachers. But in a strict sense, we have a random sample of schools, not teachers, in Thailand.

(8.3 percent of all teachers in government academic secondary schools), and, on the basis of 1965 figures, enroll 13,325 pupils (8.5 percent of the total enrollment of all schools in this category). Due to the absence of some teachers at the time questionnaires were administered in their respective schools, not all of the teachers employed by our sample schools completed the instruments."

Of the 38 sample schools, 24 (63.5 percent) enroll both boys and girls (260 of the 440 government academic secondary schools in Thailand, or 59.1 percent, are coeducational), seven sample schools (18.2 percent) enroll only girls (87 or 19.8 percent of the total universe of Thai secondary schools are of this type), and seven sample schools (18.2 percent) enroll only boys (93 or 21.1 percent of the total universe are of this type). These comparisons indicate that coeducational schools are slightly over-represented in our sample. The extent to which sample schools are representative of the universe - in terms of geographical location and number of teachers employed - may be determined by comparison of Table 3-2 with Table 3-3; sample schools seem to reflect rather faithfully these two characteristics of the universe.* Table 3-4 provides pertinent information about each of our sample schools.

Instrumentation

A central purpose of the present research is to test within the Thai environment certain hypotheses generated by diffusion researchers in the Western milieu. Whenever possible, therefore, scale items and direct questions utilized

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* But as pointed out just previously, this degree of representativeness is largely an artifact of our sampling procedures, which were designed to yield a sample of schools and teachers that were proportionately representative by geographical area (although not by educational region).

Table 3-2

Number of Schools and Teachers for All Government Secondary Academic Schools in Thailand by Geographical Area and Educational Region

Geographical Area and Educational Region	Number of Schools	Percentage of Total Schools	Number of Teachers	Percentage of Total Teachers
Bangkok-Thonburi	63	14.3	2,763	31.2
Central Thailand				
Region I	32		599	
Region V	38		620	
Region VI	53		725	
Region XII	41		636	
TOTAL	164	37.3	2,580	29.2
Northeastern Thailand				
Region IX	19		338	
Region X	28		452	
Region XI	34		584	
TOTAL	81	18.4	1,374	15.5
Northern Thailand				
Region VII	41		587	
Region VIII	36		548	
TOTAL	77	17.5	1,135	12.8
Southern Thailand				
Region II	18		292	
Region III	24		451	
Region IV	13		251	
TOTAL	55	12.5	994	11.3
TOTAL	440	100.0	8,846	100.0

Table 3-3

Number of Schools and Teachers for Sample Schools by Geographical Area and Educational Region

Geographical Area and Educational Region	Number of Schools	Percentage of Sample Schools	Number of Teachers	Percentage of Sample Teachers
Bangkok-Thonburi	5	13.2	201	32.0
Central Thailand				
Region I	1		12	
Region V	2		40	
Region VI	7		63	
Region XII	4		53	
TOTAL	14	36.8	168	26.7
Northeastern Thailand				
Region IX	1		10	
Region X	3		60	
Region XI	4		24	
TOTAL	8	21.1	94	14.9
Northern Thailand				
Region VII	2		38	
Region VIII	5		49	
TOTAL	7	18.4	87	13.8
Southern Thailand				
Region II	0		0	
Region III	2		51	
Region IV	2		28	
TOTAL	4	10.5	79	12.6
TOTAL	38	100.0	629	100.0

Table 3-4

List of Sample Schools

School Name	Changwad Name	Educational Region	Maw Saw Grades Enrolled	No. of Teachers Employed*	No. of Teachers Completing the Instrument	School Type
Bangkok-Thonburi						
Wat Singha	Thonburi	I	1-5	57	44	Coed.
Wat Nuan Noradit	Thonburi	I	1-5	63	58	Boys
Satri Wat Rakung	Thonburi	I	1-5	42	36	Girls
Wat Bang-Pakok	Thonburi	I	1-3	27	24	Coed.
Saipunya	Bangkok	I	1-5	47	39	Girls
Central Thailand						
Kratumbaen "Wiset-Samutakun"	Samutsakorn	I	1-3	15	12	Coed.
Sri Nakorn Nayok	Nakorn Nayok	XII	1-5	19	14	Girls
Bangpakong "Borworn Wittayayon"	Cha-Choengsao	XII	1-3	11	10	Coed.
Dud-Daruni	Cha-Choengsao	XII	1-5	26	20	Girls
Kuru-Prachasan	Chainat	VI	1-3	4	4	Coed.
U-Tong	Supanburi	VI	1-3	11	9	Coed.
Bangkonti "Methi-Chunhawan Wittaylai"	Samutsongkram	V	1-3	16	14	Coed.
Benjamarachutit	Rajburi	V	1-5	30	26	Boys
Phakhai "Sutha-Pramuk"	Ayudhya	VI	1-3	10	9	Coed.
Tarua "Nitaya-Nukoon"	Ayudhya	VI	1-3	14	16	Coed.
Bangsuy Wittaya	Ayudhya	VI	1-3	4	3	Coed.
Utai	Ayudhya	VI	1-3	5	3	Coed.
Bahunkuy	Rayong	XII	1-3	9	9	Coed.
Bahnmi Wittaya	Lopburi	VI	1-3	20	19	Coed.
Northeastern Thailand						
Nonthai-Kuru-Upatam	Nakorn Rachasima	XI	1-3	7	6	Coed.
Kornburi	Nakorn Rachasima	XI	1-3	6	4	Coed.
Muang Kong	Nakorn Rachasima	XI	1-3	7	5	Coed.
Yasotorn	Ubonrachatani	X	1-3	14	14	Coed.
Bahn-Pai	Khonkaen	IX	1-3	17	10	Coed.
Lam Plai Maht	Murriram	XI	1-3	9	9	Coed.
Kalasin Pittayasan	Kalasin	X	1-5	32	25	Boys
Sarakahm Pittayakom	Mahasarakahm	X	1-5	27	21	Boys

(Continued)

Table 3-4

List of Sample Schools (continued)

School Name	Changwad Name	Educational Region	Maw Saw Grades = Enrolled	No. of Teachers Employed*	No. of Teachers Completing the Instrument	School Type
Northern Thailand						
Banhong	Lamphun	VIII	1-3	5	4	Coed.
Pichai	Utaradit	VII	1-3	10	9	Coed.
Nong-Pai	Petchaboon	VII	1-3	3	4	Coed.
Satri Sukhotai "Udomdarani"	Sukhothai	VII	1-3	15	14	Girls
Sawankaloke "Sawan Wittaya"	Sukhothai	VII	1-3	20	19	Boys
Nareerat	Prae	VIII	1-5	37	34	Girls
Sahm-Ngahm-Chanupatam	Pichit	VII	1-3	4	3	Coed.
Southern Thailand						
Maha-Vachiravudh	Songkhla	III	1-5	35	33	Boys
Kampaeng Wittaya	Satul	IV	1-3	9	6	Coed.
Ammart-Panit-Nukun	Krabi	IV	1-5	21	22	Boys
Satri Chumporn "Sa-Aad Padern Wittaya"	Chumporn	III	1-3	19	18	Girls

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*Figures in this column were used in drawing the sample of schools. In some cases the numbers of teachers employed by the schools when we visited them differed from these figures.

to operationalize variables in Thailand were similar, if not identical, to those which had been employed in previous diffusion research studies, especially the Michigan pilot study,* with proper modification for the Thai socio-cultural setting.

Sixty-one teachers employed by two government academic secondary schools in Bangkok that were not in our sample (Wat Prabpra School and Kunnati School) were induced to complete a pre-test version of our questionnaire. Teachers participating in the pre-test were also asked to identify questions which proved difficult and to suggest ways in which the instrument could be improved.

Scale items drawn from U.S. studies, which were selected for inclusion in the pre-test instrument, were modified as necessity dictated and then translated into the Thai language. Additional questions designed to tap variables for which scale items had not previously been developed were similarly translated into Thai after their inclusion in the pre-test. Although the Bangkok pre-test was designed as a means of eliminating non-functional scale items through scale analysis, delays in (1) coding pre-test instruments, (2) delivery of code sheets from Bangkok to Michigan State University, (3) and obtaining inter-item and item-to-total correlations from Michigan State University made it necessary to develop the final instrument without benefit of the computer scale analysis. A few scale items were later dropped on the basis of low inter-item correlations computed using data from the pretest and the final sample.**

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*Details on scale construction and validation in this pilot study in three innovative Michigan high schools are reported by Lin and others (1966) and Lin (1966).

**Copies of the questionnaires are available upon request from Dr. Everett M. Rogers, Department of Communication, Michigan State University, East Lansing, Michigan, 48823.

It was decided to use closed-ended response categories wherever possible; this extensive pre-coding was necessitated by (1) the unavailability in Thailand of trained coders who could be relied upon to make relatively sophisticated coding decisions, (2) experience with the pre-test (which contained numerous open-ended items), indicating that Thai teachers would not provide answers to certain open-ended questions, and (3) a desire to shorten the time required by respondents to complete the instrument (which was 58 pages and 214 items in length). Response categories for many items on the final instrument were derived from answers provided by pre-test respondents to similar, open-ended questions on the earlier version of the questionnaire.

Another decision which had the effect of altering many scale response categories used in the Michigan pilot study was that of eliminating (for some questions) midpoint, indeterminate responses such as "don't know" and "not sure." Previous experience with survey research in Thailand indicated that, on forced-choice items, respondents would frequently elect indefinite, noncommittal or neutral responses were this option offered. Limited use was made of the "don't know" response when reason suggested that, without its inclusion, respondents would be forced to guess at or manufacture answers.

Table 3-5 contains translations of some typical items from the instrument administered to the sample teachers.

Analyis of pilot study, pre-test, and final sample data resulted in use of the following scales and scale items.

Independent Variables

1. Mass Media Exposure Scale: Whereas respondents in the United States had been requested to indicate if they had read a newspaper, listened to the radio, watched television, read from a book, or read a magazine within the

Table 3-5

Sample Items from Teachers' Instrument

IN THE FOLLOWING SEQUENCE OF QUESTIONS PLEASE CIRCLE THE NUMBER PRECEDING THE CORRECT ANSWER AND, WHERE REQUESTED, WRITE IN THE INFORMATION WHICH WE HAVE ASKED YOU TO PROVIDE.

- -

1. Within the last 7 days I have read one or more newspapers on . . .

    1. 7 days
    2. 6 days
    3. 5 days
    4. 4 days
    5. 3 days
    6. 2 days
    7. 1 day
    8. 0 days

9. Please circle the number preceding the names of those professional journals listed below from which you have read within the last 30 days.

    1. Secondary School Journal
    2. Wittayasarn
    3. Wittayacharn
    4. Juntr Kasem
    5. Mitr Kru
    6. Educational Center
    7. Mathematics
    8. Science
    9. Vocational School Journal
    10. Educational Radio

13. Have you ever taught in a private secondary school?

    0. No
    1. Yes

37. How, in general, would you characterize the attitude of the Under-Secretary of State for Education to the adoption of new educational practices?

    1. Very favorable
    2. Somewhat favorable
    3. Somewhat unfavorable
    4. Very unfavorable

Table 3-5 (Continued)

43. When you and your fellow teachers in this school discuss new educational practices, which do you most frequently do?

0. Usually listen
1. Usually talk
2. Talk and listen equally

THE FOLLOWING ITEMS ARE DESIGNED TO DETERMINE YOUR ATTITUDE TO THE VALUE OF ASSIGNING OUTSIDE READING TO THAI GOVERNMENT SECONDARY SCHOOL STUDENTS. PLEASE READ EACH STATEMENT OR QUESTION CAREFULLY BEFORE GIVING YOUR RESPONSE. PLEASE ANSWER EVERY QUESTION.

FOR THE PURPOSE OF THIS STUDY, ASSIGNMENT OF READING IN LIBRARY BOOKS MEANS THAT THE TEACHER REQUIRES THAI SECONDARY SCHOOL STUDENTS TO READ FROM BOOKS OTHER THAN THE REGULAR TEXTBOOKS USED IN THE COURSE. SUCH READING ASSIGNMENTS WOULD BE CONSIDERED SUPPLEMENTAL. THE BOOKS FROM WHICH READINGS ARE ASSIGNED MAY BE KEPT EITHER IN THE CLASSROOM OR IN A SCHOOL LIBRARY ROOM.

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68. Have you heard that some teachers in Thai government secondary schools now require that their students read assignments in library books?

0. No
1. Yes

About how many years ago did you first hear that some teachers in Thai government secondary schools were requiring their students to read from library books?

1. Less than 1 year ago
2. 1 or 2 years ago
3. 3 or 4 years ago
4. 5 or 6 years ago
5. 7 or 8 years ago
6. 9 or 10 years ago
7. More than 10 years ago

69. What is your opinion about the idea that students in Thai government secondary schools should be required to read library books? I believe that this requirement is educationally. . .

1. very beneficial
2. somewhat beneficial
3. not very beneficial
4. not at all beneficial

Table 3-5 (Continued)

70. Do you now require that your students read assignments in library books?

0. No
1. Yes

About how many years ago did you first require that your students read assignments in library books?

1. Less than 1 year ago
2. 1 or 2 years ago
3. 3 or 4 years ago
4. 5 or 6 years ago
5. 7 or 8 years ago
6. 9 or 10 years ago
7. More than 10 years ago

- -

FOLLOWING ARE A SERIES OF...STATEMENTS DESCRIBING HOW YOUR SCHOOL PRINCIPAL MAY BEHAVE TOWARD THE OTHER TEACHERS IN THIS SCHOOL. PLEASE READ EACH STATEMENT CAREFULLY AND THEN SELECT THE ONE ALTERNATIVE WHICH BEST SUMMARIZES THE EXTENT OF YOUR AGREEMENT OR DISAGREEMENT WITH THE STATEMENT.

- -

145. "The principal of this school frequently makes decisions which affect the other teachers without consulting them first."

1. I agree very much
2. I agree on the whole
3. I agree a little
4. I disagree a little
5. I disagree on the whole
6. I disagree very much

146. "The principal of this school is usually very kind and understanding when he talks to the other teachers."

1. I agree very much
2. I agree on the whole
3. I agree a little
4. I disagree a little
5. I disagree on the whole
6. I disagree very much

- -

PLEASE ANSWER THE FOLLOWING...QUESTIONS ON THE BASIS OF HOW YOU THINK YOUR STUDENTS FEEL ABOUT YOU.

- -

Table 3-5 (Continued)

180. How do you think your students would rate your methods of classroom discipline?

1. outstanding
2. among the best
3. very good
4. above average
5. about average
6. below average
7. among the poorest

- -

FOLLOWING ARE A SERIES OF...STATEMENTS WHICH MAY DESCRIBE HOW YOU FEEL ABOUT DEALING WITH...SEVERAL PERSONAL AND PROFESSIONAL MATTERS. PLEASE CIRCLE THE NUMBER PRECEDING THE RESPONSE WHICH BEST SUMMARIZES THE EXTENT OF YOUR AGREEMENT OR DISAGREEMENT WITH THE STATEMENT.

- -

190. "I really believe that we Thai government secondary school teachers could have done a much better job, or at least done just as well, if things had not been changed so much in our schools."

1. I agree very much
2. I agree on the whole
3. I agree a little
4. I disagree a little
5. I disagree on the whole
6. I disagree very much

preceding 24 hours, teachers in Thailand were asked if they had done so within the previous seven days, on the assumption that exposure to mass media is less frequent in Thailand than in the United States. The scores representing exposure to five different mass media were summed for each respondent to provide a general index of mass media exposure.

2. Openmindedness: The Troldahl-Powell (1965) short form of the Rokeach (1960) Dogmatism scale was used. Agreement responses were assigned low codes; therefore, a high score on the test indicated openmindedness and a low score represented closed-mindedness.

3. Need for Autonomy: Two questions in the Michigan pilot study were slight revisions of items in Vroom's (1960) "Need for Independence" scale; questions used in Thailand were identical to those employed by Lin and others (1966), save for abandoning the midpoint indeterminate response of "don't know." The sum of the scores of a respondent on the scale items was considered an index of his need for autonomy.

4. Perceived Participation in School (or Changwad) Decision-Making: Two items, based on Fleishman's (1955) scale, were used in various forms to measure (a) the teacher's perception of his own participation with the principal in school decision-making, (b) his perception of participation by other teachers in school decision-making, (c) the principal's perception of the role he allowed to teachers in school decision-making, (d) the principal's perception of his participation in decision-making with the changwad education officer, and (e) the C.E.O.'s perception of his participation in decision-making with the Under-Secretary of State for Education. In the Bangkok pretest, the two scale items were found to be intercorrelated .78 and .72.

5. Perceived Psychological Distance Between Self and Principal: Four of the five items in our scale are taken from Fleishman's (1955) scale, and revised for use in the Michigan pilot study. All items were slightly reworded for use in Thailand. Inter-item correlations from the Bangkok pretest ranged from .16 to .63. The sum of the five items was taken as an index of the psychological distance between the teacher and his principal. Similar items were used to measure each teacher's perceptions of the psychological distance between his fellow teachers and the principal. These items had pretest intercorrelations ranging between .29 and .69.

Similar scales were used to measure the principal's perceptions of the psychological distance he maintained from his teachers, and of the psychological distance between him and his changwad education officer. In the changwad education officer questionnaire, similar scales were used to measure the C.E.O.'s perception of the psychological distance he maintained from his principals, and of the psychological distance between him and the Under-Secretary of State for Education.

6. Reported Frequency of Performance Feedback from Principal to Self: Both items used in the Michigan pilot study were reworded in Thailand, and response options were reduced from five to four. The inter-item correlation in the Bangkok pretest for the two items was .48 . A similar scale was used to measure the teacher's perception of performance feedback from the principal to the other teachers in his school.

Similar scales were used to measure the principal's perception of feedback to his teachers, and from his changwad education officer, and the changwad education officer's perception of feedback to his principals, and from the Under-Secretary of State for Education.

7. Change Orientation: Intercorrelations for the change orientation scale items ranged from -.10 to .25; one item was negatively correlated with the others, so it was dropped from the scale. The intercorrelations for the remaining three items ranged from .22 to .25. These three items were used as an index of the respondent's attitude toward change in the Thai educational system.

A similar scale was used to determine the respondent's perceptions of the change orientations of others.

8. Self-Perceived Role Satisfaction: Two of the four items used on the Michigan pilot study were included on the final questionnaire used in Thailand. The inter-item correlation derived from sample teacher data was .51.

9. Self-Perceived Feelings of Security: The three items which constitute this scale were taken from the Michigan pilot study, although the midpoint indeterminate response category was deleted. Inter-item correlations in the Bangkok pretest were .39, .47, and .49.

10. Self-Designated Innovation Opinion Leadership: In the teacher questionnaire, a scale consisting of three dichotomous questions was used to measure the subject's perception of his degree of opinion leadership regarding the diffusion of innovations to his fellow teachers. Intercorrelations of these items ranged from .13 to .28. On the principal questionnaire two dichotomous items were used to measure self-designated opinion leadership (1) among other principals, and (2) among teachers in his school. On the C.E.O. questionnaire, four items were used to provide a general index of self-designated opinion leadership among teachers, principals, and other C.E.O.'s.

11. Ratings of Teaching (and Administrative) Ability: A five item scale was used to measure each teacher's rating of his teaching ability. The pretest intercorrelations of these items ranged from .54 to .81. Similar scales were used to measure each respondent's teaching ability as it would be rated by his students, by his fellow teachers, and by his principal. Intercorrelations of these scale items varied from .35 to .82.

Similar scales were used to measure self-rated administrative ability for principals and changwad education officers.

12. Self-Perceived Legitimacy of Participation in School Decision-Making: Inter-item correlation between two items measuring this variable was .34, using data obtained from our sample teachers. These two items were among the three used in the Michigan pilot study.

Similar scales were used to measure the principals' perceptions of the legitimacy of teacher participation in school decision-making and the C.E.O.'s perception of the legitimacy of participation in decision-making by teachers and principals.

13. Knowledge of Ministry of Education Officials: Respondents were asked to identify the Directors-General of the Departments of Secondary Education and of Educational Techniques.

14. Knowledge of Other Countries: This variable was measured by asking the subject to identify Rhodesia, U Thant, and the Prime Minister of India.

15. Knowledge of Diffusion Strategies: A ten-item test was used to obtain an index of the principal's or C.E.O.'s knowledge of strategies he

might use to speed the diffusion process in his school (or changwad).*

16. Reported Frequency of Communication with Principal about Educational Matters: Three items measured the comparative frequency of communication between teacher respondents and their school principals as perceived by the teachers. With minor rewording of questions and response categories to obtain greater clarity, two items from the Michigan pilot study were included in the three-item scale used in Thailand.

17. Perceived Cohesiveness of School Faculty: A four-item scale was used to measure the teacher's perception of the cohesiveness of his school faculty. The item intercorrelations in the Bangkok pretest ranged from .25 to .75.

The remaining independent variables were measured with single, direct questions.

Dependent Variables

18. Time of Awareness of Innovations: The awareness time was reported by our respondents as the number of years ago they had first heard about each of the ten innovations. Thus a high awareness score represents a tendency to be relatively early in becoming aware of innovations. For the teachers, all inter-item correlations were positive, ranging from .10 to .47.

19. Time of Adoption of Innovations: Innovativeness is defined as the degree to which an individual is relatively earlier than other members in his social system in adopting new ideas (Rogers, 1962, p. 19). Adopter categories

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*A respondent's score for knowledge of diffusion strategies was based on the extent of his agreement with statements representing common findings in diffusion research. The respondent was asked, for instance, if he agreed that "younger government secondary school teachers usually adopt new educational practices more readily than do older teachers."

are classifications of individuals on the basis of innovativeness as (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards.

It was felt that early adoption time would serve as a valid index of teacher innovativeness only for innovations which the individual teacher could decide to adopt or reject. Accordingly the times of adoption (reported as the number of years since first use of the innovation) for the three innovations involving individual-optional decisions - library reading assignments, class discussion methods, and objective tests - were summed to provide a general measure of time of adoption for teachers. A high score on this index reflects teacher innovativeness. The year of adoption for these three innovations was adjusted for the length of the subject's teaching experience, as a respondent could hardly adopt a new idea until he began teaching.

Two indices of adoption were used as indicants of principal innovativeness. Times of (school) adoption of eight collective innovations (including school adoption of library books) were summed to provide a general measure of school adoption time. This measure presumably reflects, to some unknown degree, the principal's innovativeness.* Also, the year reported by the principal for the earliest adoption of each of three individual-optional innovations by teachers in the school were summed to provide a general measure of perceived teacher adoption of innovations, another possible indicant of the school's, and perhaps the principal's, innovativeness.

The changwad education officers were asked when any of the secondary schools in their changwad had adopted each of the eight collective innovations.

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*The exact degree is unknown because we have no data, unfortunately, on the role that each school principal played in decisions to adopt these eight innovations.

These responses were summed to provide a general index of changwad time of adoption.

20. Perceived Beneficiality of Innovations: We determined how favorably each respondent perceived each of the ten innovations. This measure of perceived beneficiality of innovations is closely similar to Lin's (1966, p. 11) concept of internalization, the extent to which a member perceives an innovation as relevant and valuable to his role performance in the organization.

Translation of Instruments

Three Thai nationals, working independently, were engaged to translate questionnaire items originally written in English into the Thai language. Two of these three are professional translators employed in this capacity by the United States Agency for International Development in Bangkok, and the third is an official in the Thai Educational Planning Office.

The three independently-accomplished translations of the questionnaire items were submitted to Dr. Kaw Swasdi Panich, Director of the Educational Planning Office, for his review. He noted several points at which the translators had not interpreted the questionnaire items identically, and sought to choose the Thai interpretation which most adequately reflected the intended English usage. The resulting Thai version of the questionnaire was used in the Bangkok pretest. On the basis of comments obtained from pretest respondents, Dr. Kaw and one of the original translators made several further slight modifications, and this revised version was used in data-collection in our sample schools.

Field Procedures

Several weeks before data-collection in a school, letters were sent to the changwad education officer in whose province the sample school was located, and to the principal of the school to be visited. These letters served to announce the date (or dates) that the research team would be at the sample school, and very generally described the purpose of the data-collection.

Rather than proceed directly to sample schools, visits were first made to changwad education officers, and the research project was explained to them in some detail. If the sample school was located in a town or village other than that serving as headquarters for the changwad education officer, a courtesy call was made also to the amphur education officer in whose district the school was located. Courtesy calls were also made to the offices of several regional education officers - but in only a few cases were these officials found to be available.

In general, changwad and amphur education officers expressed pleasure in the consideration shown them and their office by these meetings; several remarked that Ministry of Education officials often visited schools under their jurisdiction without notifying them in advance. While neither changwad nor amphur education officers appeared to have great interest in the research project itself, our research staff were, without exception, cordially received. These meetings with local education officers also were very useful as a means of learning about the problems faced by field representatives of the Ministry of Education in diffusing innovations.

In a typical day, changwad and/or amphur education officers were met during the early morning hours, and then the sample school was visited and arrangements were made with the principal to administer the questionnaire after regular school hours. An interview with the principal was conducted, usually in the early afternoon, and the school facilities were inspected. It was during this period preceding administration of the teacher questionnaires that an attempt was made to examine the school facilities, to talk with the principal about problems encountered in administering his school, to learn something about the local economy, and to gain some insight into his perception of the educational innovations we were studying.

At an hour appointed by the principal, usually between 2:30 and 4:00 p.m., teachers and principal would gather in a room - frequently the library, if one existed - for the purpose of completing the questionnaires. Our Thai research counterpart, Mr. Muangchai, would at this time explain that the Project had been sanctioned by the Thai National Research Council, and was being conducted under the auspices of the Educational Planning Office in the Thai Ministry of Education. In these introductory remarks Mr. Muangchai stressed the necessity that all questions be answered candidly, and drew attention to the fact that respondents would not be identified by name.

At this point the questionnaires were distributed and respondents were requested to read the covering pages. Mr. Muangchai then demonstrated the correct procedure to be followed in answering questionnaire items, and illustrated the proper method for answering several of the questions. After receiving brief definitions of each of the ten innovations about which questions were to be asked, respondents were instructed to begin answering questions on the instrument. Mr. Muangchai indicated that he would be available for individual explanations where needed.

Neither teachers nor principals appeared to have undue difficulty in understanding the instrument or what was required of them. Many teachers and some principals - especially older respondents - experienced some difficulty in understanding some of the questions. In nearly every school, it proved impossible to restrain teachers completely from consulting one another when the items which dealt with knowledge of other countries and of Ministry officials were reached. Few appeared to be sure of answers to these factual questions, and it proved very difficult to impress upon them the need to answer independently.

Each school was assigned a code number, and each teacher was also assigned a number identifying him (or her).

The vast majority of teachers and principals completing our instruments expressed little interest in obtaining reports of the results, and few bothered to ask the purpose served by the Project. Most respondents seemed to perceive of the request for information as a legitimate, and not particularly unreasonable or eventful, occurrence.

Preliminary Data-Analysis Procedures

Before correlations between independent and dependent variables were obtained, several adjustments and transformations of the raw data were required.

An error check was conducted by scanning frequency counts and computer printouts of data decks to identify "illegal" codes. When illegal codes were found, reference was made to the original code sheets to determine if the error discovered represented a card-punching error and, where this proved to be the case, new cards were punched. The few errors which could not be corrected by this procedure were recorded as non-responses.

Adjustment, or transformation, of "no response" codes was accomplished by assigning either sub-sample or "school" mean values. "No response" codes were recoded to school mean values for schools with at least thirty teachers; for smaller schools means for recoding purposes were based on two or more similar schools with a total of at least thirty teachers.

Of the 629 teacher respondents, 155 (or 24 percent) had five or fewer years of teaching experience; it was assumed that since they hardly could have become aware of, or adopted, innovations before becoming teachers, their awareness and adoption time scores would not validly reflect their awareness or adoption of innovations, in comparison to their peers with longer teaching experience.

Inspection of frequency distributions for awareness and adoption indicated a generally normal distribution over the entire time range. Based on this normal distribution, awareness and adoption scores were adjusted to compensate for short intervals of teaching experience." For example, teachers reporting 6-8 years of teaching experience and adoption of an innovation 1-2 years ago could have from four to seven "lag" years between their first employment and adoption. Thus, the adjusted awareness and adoption year for each respondent was estimated.

In an effort to determine how these adjustments would affect awareness and adoption scores, a random subsample of 52 respondents with five or fewer years of teaching experience was drawn. Raw (unadjusted) scores for these 52 respondents on two of the ten awareness and adoption items were compared to their adjusted scores. Results are shown in Table 3-6.

Table 3-6

Effect of Adjusting Awareness and Adoption Scores for Teaching Experience

Effect of Adjusting Scores for Teaching Experience	Number of Teachers Innovation A	Number of Teachers Innovation B
None	12	12
Change of one category	1	0
Change of two categories	35	36
Change of three categories	4	4
TOTAL	52	52

Approximately 66 percent of those respondents with five or fewer years of teaching experience were affected by the adjustment, and had their awareness or adoption category adjusted upward from two to four years. These adjustments were computed for awareness of all ten innovations, and for the time of adoption for the three individual-optional innovations. No correction for years of experience was made on the data for principals and changwad education officers.

Chapter IV

DIFFUSION OF INNOVATIONS AMONG TEACHERS

Questionnaire responses were obtained from 629 (89 percent) of the 706* teachers in the 38 sample schools. For individual schools the response rate ranged between 59 and 97 percent of the teachers in the school. It is assumed that the 629 teachers reached are generally representative of the population of teachers in Thai government academic secondary schools; the descriptive and correlational analysis in this chapter is based on that assumption.

The analyses computed for the total sample of 629 teachers were also computed for three subsamples of the respondents. The first subsample included the teachers from 22 sample schools located in amphur capitals. These schools had a total of 221 teachers, an average of 10.0 per school with a range from four to 21 teachers; 182 (82 percent) of the teachers in these "amphur schools" responded to the questionnaire.

The second subsample included the teachers from 11 schools in changwad capitals. These schools had a total of 289 teachers, an average of 26.3 per school, with a range from 15 to 40 teachers; 246 (84 percent) of the teachers in these "changwad schools" responded to the questionnaire.

The third subsample included the teachers from five schools in Bangkok and Thonburi (a suburb of Bangkok). These schools had a total of 232 teachers, an average of 46.4 per school, with a range from 26 to 58 teachers; 201 (87 percent) of the teachers in these "Bangkok-Thonburi schools" responded to the questionnaire.

The separate analyses of these three subsamples was intended to provide a check on the influence of relative isolation from the administrative center of the educational system. Secondary schools in Bangkok and Thonburi are administered directly by the Ministry of Education, while other schools are administered indirectly through the changwad education officers who are in closer day-to-day contact with changwad schools than with amphur schools. This division of the sample also served as a check on the effects of school size, since amphur schools tend to be smaller than changwad schools, which in turn tend to be smaller than Bangkok-Thonburi schools.

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*This represents the number of teachers, excluding principals and including five Peace Corps volunteers, employed by the sample schools at the time the data was collected.

Description of the Thai Teachers

Independent Variables

Most secondary school teachers in Thailand are rather young. Sixty-four percent of the sample teachers are between 25 and 35 years old. (Table 4-1).

Table 4-1

Age Distribution of Sample Teachers

Age	Frequency	Percentage
20-24	21	3.3
25-29	229	36.4
30-34	173	27.5
35-39	74	11.8
40-44	57	9.1
45-49	33	5.3
50-54	27	4.3
55-59	14	2.2
60 or above	0	0.0
No response	1	0.2
TOTAL	629	100.0

Teachers in amphur schools tend to be younger than those in changwad and Bangkok-Thonburi schools.

Three hundred and thirty-one (53 percent) of the sample teachers are women and 298 (47 percent) are men. In the amphur schools almost two-thirds of the teachers are men; but in the Bangkok-Thonburi schools almost two-thirds of the teachers are women.

The educational levels reported by the sample teachers are given in Table 4-2.

Table 4-2

Formal Education of Sample Teachers

Highest Educational Level Attained	Frequency	Percentage
High school certificate (Maw Saw 5)	17	2.7
Secondary school teachers certificate (2 years of college)	378	60.1
Secondary school teachers certificate, plus additional courses	37	5.9
College diploma (bachelor's degree)	180	28.6
College degree (master's degree)	1	0.2
Doctor's degree	0	0.0
No response	16	2.5
TOTAL	629	100.0

Teachers in changwad schools have more education than those in amphur schools, and teachers in Bangkok-Thonburi schools have more education than those in changwad schools. One hundred and seventy-two teachers (27 percent) attended colleges or universities (excluding teachers' colleges) in Thailand. The distribution is given in Table 4-3.

Table 4-3

Colleges and Universities Where Sample Teachers Studied

Thai University Attended	Frequency	Percentage of Total Sample
Chulalongkorn University	44	7.0
Prasarn Mitr College of Education	86	13.7
Pratumwon College of Education	10	1.6
Bang Saen College of Education	22	3.5
Thammasat University	10	1.6
TOTAL	172	27.4

Five teachers studied abroad, one in England, one in Ireland, two in the United States, and one in Australia. A total of 106 respondents indicated that they had traveled abroad; the countries which they visited are shown in Table 4-4.

Table 4-4

Travel Abroad by Sample Teachers

Country Visited	Frequency	Percentage of Total Sample
Laos	46	7.3
Malaysia	39	6.2
Philippines	5	0.8
Japan	3	0.5
Burma	2	0.3
Australia	2	0.3
U.S.A.	2	0.3
Singapore	1	0.2
Taiwan	1	0.2
England	1	0.2
France	1	0.2
New Zealand	1	0.2
Finland	1	0.2
TOTAL	105	16.9

Teachers were asked about their parents' educational levels. The median educational level reported for fathers was six years, and the median level reported for mothers was three years. The median difference between the teacher's own educational level and the average educational level of his parents is ten years. The fathers' occupations of the sample teachers are shown in Table 4-5.

Table 4-5

Occupations of Sample Teachers' Fathers

Occupation	Frequency	Percentage
Professional (doctor, dentist, lawyer)	19	3.0
Businessman	102	16.2
Civil government official	141	22.4
Professional educator (college) or school teacher	73	11.6
Farmer	203	32.3
Member of army, navy, or air force	15	2.4
Unskilled, semi-skilled, or skilled laborer	10	1.6
Other	59	9.4
No response	7	1.1
TOTAL	629	100.0

Years of teaching experience in government secondary schools and years of experience in the present school are correlated .73, and are correlated with age .88 and .69, respectively. The distribution of teaching experience is given in Table 4-6. The median total teaching experience is nine years.

Table 4-6

Length of Teaching Experience in the Present School and Total Teaching Experience for Sample Teachers

No. of years	Years in Present School		Years of Total Experience	
	Frequency	Percentage	Frequency	Percentage
Less than 2 years	66	10.5	19	3.0
2-5 years	192	30.5	136	21.6
6-8 years	136	21.6	145	23.1
9-11 years	93	14.8	105	16.7
12-14 years	54	8.6	58	9.2
15-17 years	31	4.9	52	8.3
18-20 years	16	2.5	26	4.1
More than 20 years	39	6.2	85	13.5
No response	2	0.3	3	0.5
TOTAL	629	100.0	629	100.0

Median amount of teaching experience in the present school is eight years. Both the length of total experience and length of experience in the present school tend to be shorter for teachers in amphur schools than for teachers in changwad and Bangkok-Thonburi schools.

Some measure of mobility is provided by the responses given in Table 4-7 to the question: "In how many other Thai government secondary schools have you taught?" In addition, 155 teachers (25 percent) reported having had experience teaching in private secondary schools.

Table 4-7

Mobility of Sample Teachers in Other Thai Government Secondary Schools

Number of Other Schools	Frequency	Percentage
None	312	49.6
One	188	29.9
Two	78	12.4
Three	26	4.1
Four	10	1.6
Five	7	1.1
Six	2	0.3
Seven	1	0.2
Eight or more	2	0.3
No response	3	0.5
TOTAL	629	100.0

Our respondents were asked how many of their five best friends are teachers. Table 4-8 suggests there are close friendships between many teachers in Thai secondary schools. Each sample respondent was asked to rank several categories of persons in order of the importance he attached to their opinion of his teaching

. . .

Table 4-8

Friendship Among Teachers

Number of Five Best Friends Who Are Teachers	Frequency	Percentage
None	9	1.4
One	28	4.5
Two	66	10.5
Three	131	20.8
Four	101	16.1
Five	293	46.6
No response	1	0.2
TOTAL	629	100.0

ability. Three hundred and seventy-four teachers (59 percent) ranked the opinion of students as most important. The next three categories, in order of importance, were school principals, other teachers, and parents of students.

Our sample respondents indicate that Thai teachers are fairly heavy consumers of mass and professional media. Five hundred and seventy-eight (92 percent) of the 629 respondents own radios. Two hundred sixteen (34 percent) have regular access to television receivers, and nearly all read newspapers and general circulation magazines several times weekly. Table 4-9 lists the titles of

Table 4-9

Professional Journal Readership of Sample Teachers

Professional Journal Read	Frequency	Percentage of Total Sample
Wittayasarn	512	81.4
Mitr Khru	249	39.6
Secondary School Journal	213	33.9
Wittayacharn	98	15.6
Education Center	96	15.3
Science	70	11.1
Mathematics	48	7.6
Educational Radio	40	6.4
Juntr Kasem	30	4.8
Vocational School Journal	18	2.9

professional education journals published in Thailand, together with the number of sample respondents reading each within the past 30 days. Educational journals of a more general nature command much wider readership than do more specialized publications.

The diffusion of educational innovations is also enhanced by attendance of teachers at meetings convened to discuss new methods. Table 4-10 gives the frequencies of such attendance. About half of the sample teachers did not attend any meetings in the previous year. Bangkok-Thonburi teachers attend significantly more professional meetings than amphur and changwad teachers.

Table 4-10

Professional Meeting Attendance of Sample Teachers

Number of Meetings Attended	In Bangkok		In Other Changwads	
	Frequency	Percentage	Frequency	Percentage
None	444	70.6	460	73.1
1-2 times	149	23.7	152	24.2
3-4 times	23	3.7	17	2.7
5-6 times	8	1.3	0	0.0
7-8 times	1	0.2	0	0.0
9-10 times	0	0.0	0	0.0
11-12 times	1	0.2	0	0.0
13 or more times	3	0.5	0	0.0
TOTAL	629	100.0	629	100.0

Dependent Variables

At the time the data were collected, each of the ten innovations studied was familiar to most of the sample teachers. Table 4-11 shows the number of teachers who reported that they were aware of use of the different innovations in Thai government secondary schools.

Table 4-11

Awareness of Innovations by Sample Teachers

Innovation	Frequency Aware	Percentage Aware
Class discussion method	570	90.6
Objective tests	620	98.6
Library reading assignments	586	93.2
Use of slide projectors	505	80.3
Coeducation	620	98.6
Peace Corps volunteer teachers	592	94.1
Organization into departments	606	96.3
Guidance counseling	557	88.6
Teaching of handicrafts	555	88.2
Parent-teacher associations	571	90.8

Teachers were asked to recall the time they first became aware of (Thai) use of the innovations. Figure 4-1 shows the increasing awareness of the innovations studied during the ten years prior to the collection of the data. For all of the innovations except objective testing there is a tendency for the awareness curves to become steeper near the middle of the ten year period, indicating an accelerating rate of diffusion of awareness. This phenomenon appears frequently in the literature on diffusion. The greater slope of the curves for objective testing, departmental organization, and Peace Corps teachers indicates that awareness of these innovations diffused most rapidly.

It is important to recall that these awareness figures - even to the extent that they accurately reflect reality - say little about the extent of knowledge possessed by teachers. Many Ministry supervisors and Prasarn Mitr faculty members have suggested that the average secondary teacher understands very little about these innovations. Few sophisticated texts and articles dealing with these subjects have yet appeared in Thai, and, while there are some English language texts and articles in the Prasarn Mitr library and in

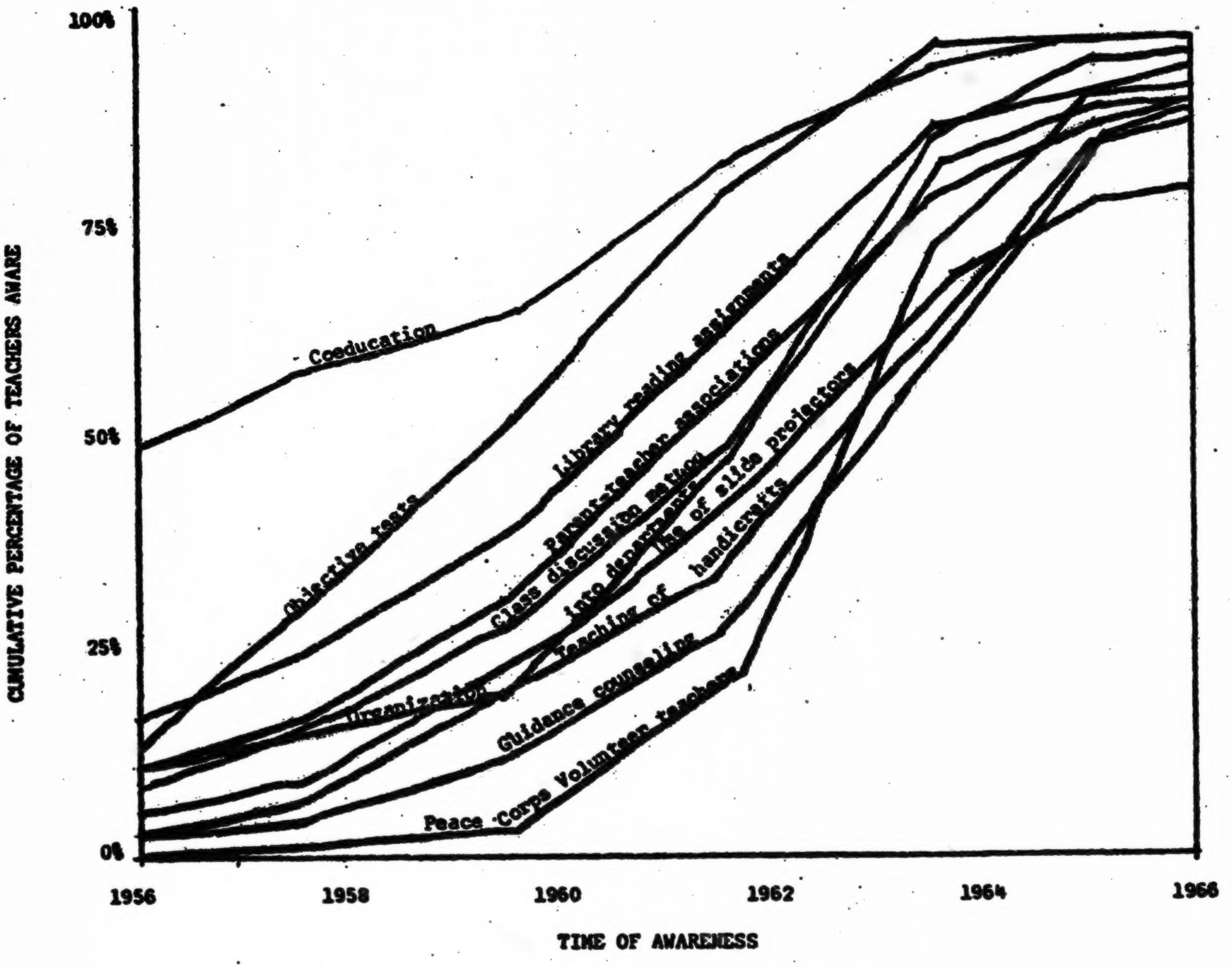


Figure 4-1. Awareness of Thai Use of Ten Innovations by Sample Teachers

offices of Ministry supervisors, the average teacher possesses neither ready access to such information sources nor the English proficiency to read them.

Some insight into the diffusion process may be gained by looking at the teacher's reports of the sources (channels) from which they first heard of two of the innovations, coeducational schools and library reading assignments, in Table 4-12. It may be seen that the three main sources of first information

Table 1-12

Source (Channel of Awareness of the Innovation	Library Reading Assignments		Coeducation	
	Frequency	Percentage	Frequency	Percentage
From one of my college instructors	239	38.0	120	19.1
From a teacher in a secondary school	118	18.8	155	24.6
From the principal of a secondary school where I taught	82	13.0	57	9.1
From a Ministry of Education publication	98	15.6	202	32.1
From a Ministry of Education directive	6	1.0	45	7.2
From a school supervisor (inspector)	37	5.9	7	1.1
At a conference	1	0.2	0	0.0
From an amphur education officer	2	0.3	0	0.0
From a changwad education officer	1	0.2	3	0.5
From a college textbook	16	2.5	13	2.1
While studying abroad	1	0.2	1	0.2
No response	23	4.5	26	4.1
TOTAL	629	100.0	629	100.0

on innovations are college instructors, other teachers, and Ministry of Education publications. Ministry publications seem to be more influential in the case of coeducation, an innovation which must be adopted by whole schools. College instructors seem to be more influential in the case of library reading assignments, an individual-choice innovation. The number of instances in which college instructors were first sources suggests that new teachers may bring awareness of innovations into the schools. This process seems to be reflected in the initial steep slope of the adjusted awareness curves in Figures 4-2, 4-3, and 4-4. Within the schools awareness of innovations passes between teachers (though some of the responses in this category may represent awareness gained before the respondent became a teacher). Such interpersonal diffusion is thought to explain the relatively rapid rate of diffusion in the middle stages of the diffusion process.

It appears that many of the teachers were never required to read from library books during their own secondary education, even that many did not hear about Thai use of this innovation until after they finished their teacher-training program. When it is recognized that very few of those teaching today were exposed to this innovation during their own education, it becomes clear why many teachers find it hard to incorporate library assignments into their own teaching patterns.

Figures 4-2, 4-3 and 4-4 show the curves of awareness and of reported adoption times for the three individual-choice innovations. In each figure there are cumulative curves for the actual awareness and adoption times reported by the sample teachers and for the adjusted awareness and adoption times which were used in the correlational analysis. The awareness and adoption curves which have been adjusted for the length of each subject's teaching experience (see Chapter III) represent diffusion rates which would be expected if all the teachers had been in the school system from the beginning of the ten-year period. It can be seen from Figures 4-2, 4-3, and 4-4 that awareness and

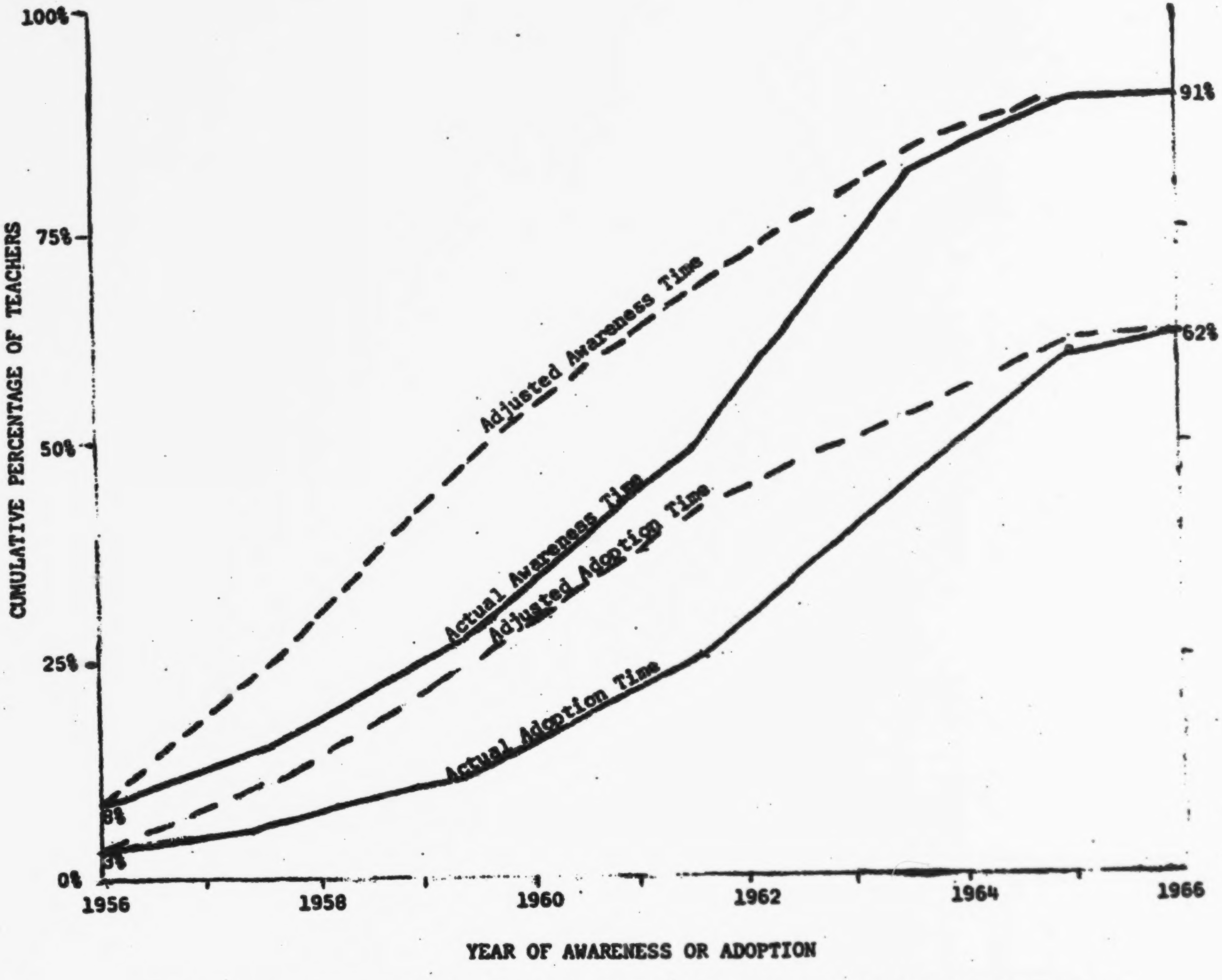


Figure 4-2. Awareness and Adoption of Class Discussion Method by Sample Teachers

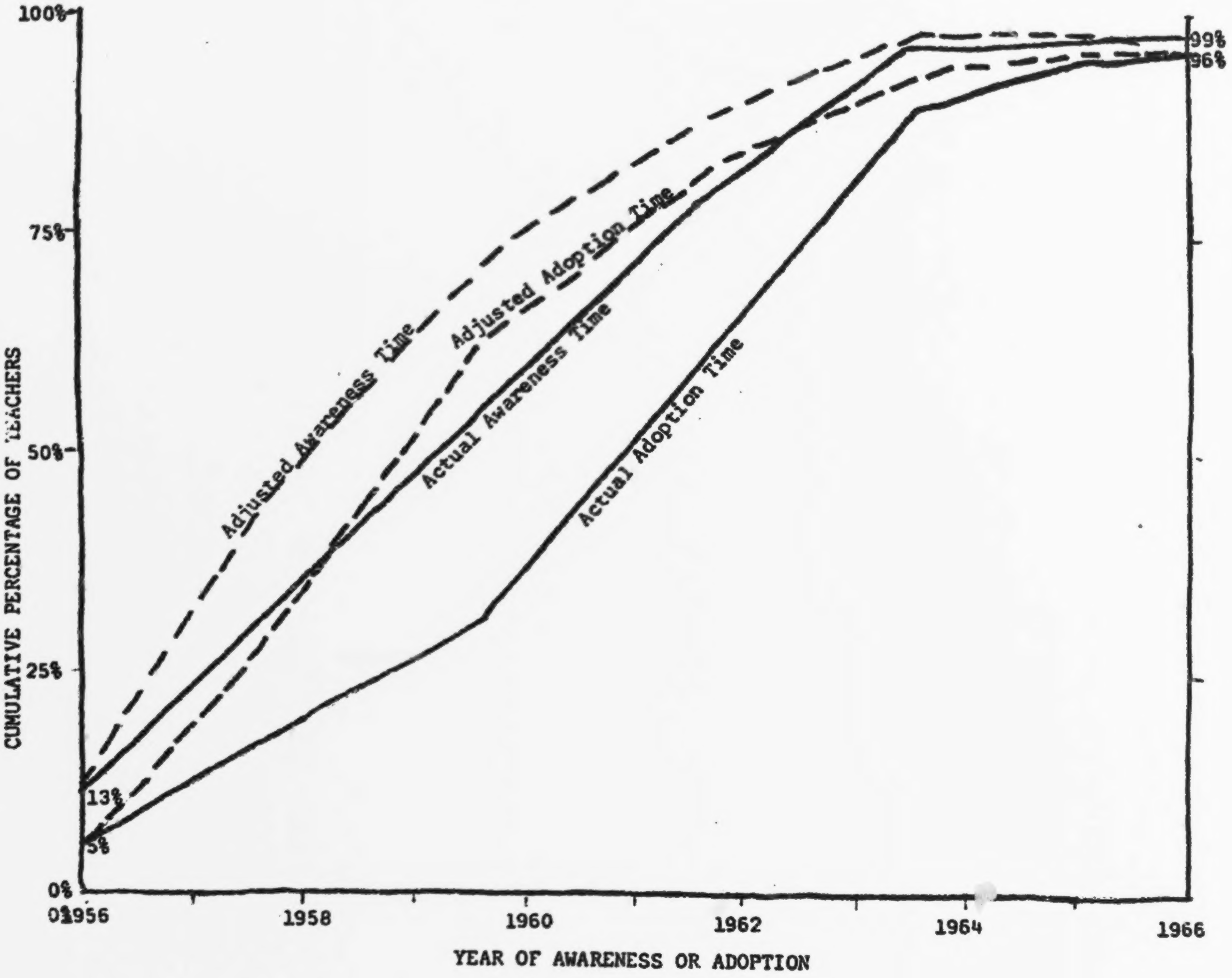


Figure 4-3. Awareness and Adoption of Objective Tests by Sample Teachers

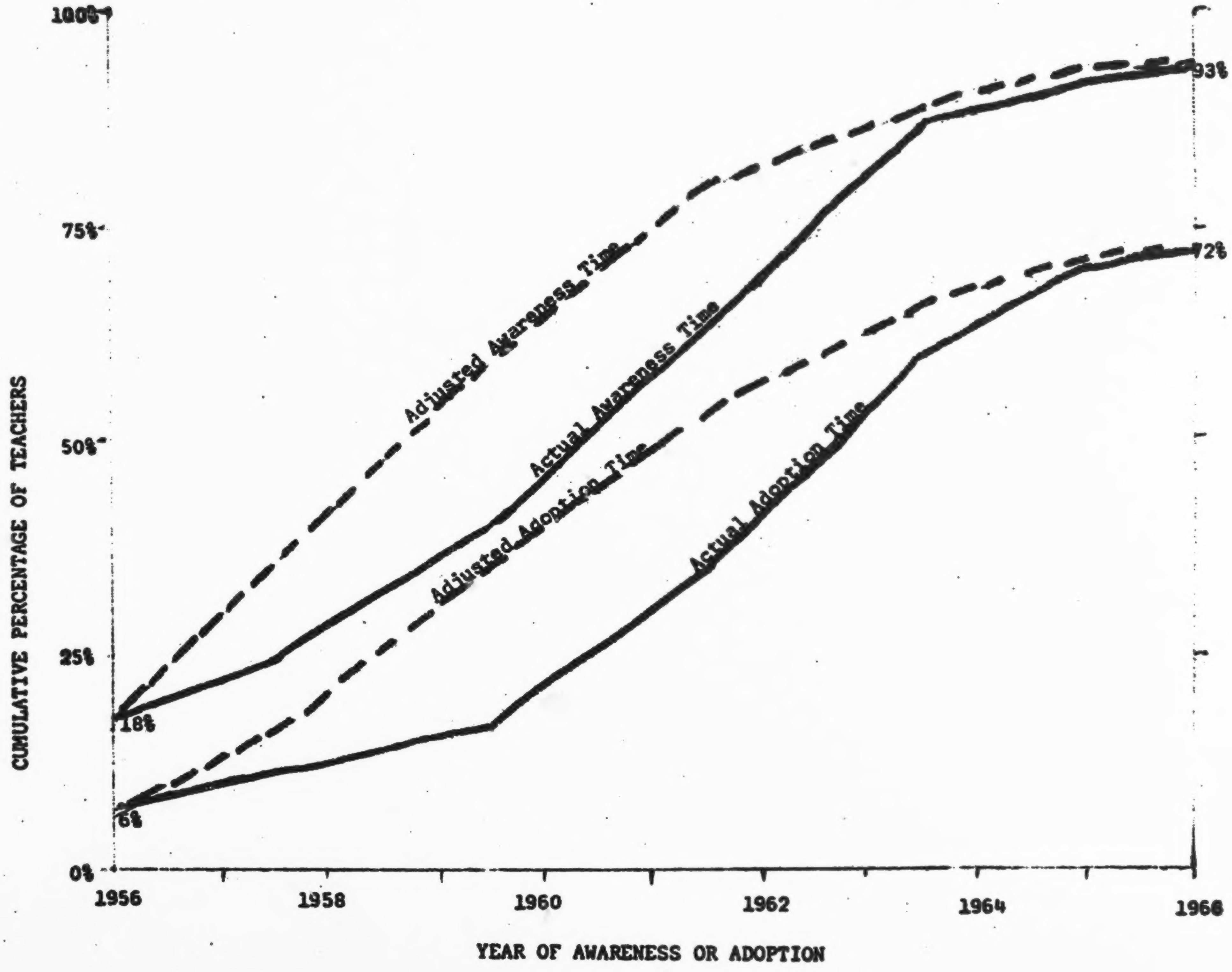


Figure 4-4. Awareness and Adoption of Library Reading Assignments by Sample Teachers

adoption of objective testing diffused more rapidly than awareness and adoption of the other individual-choice innovations. Moreover, there is less lag between awareness and adoption in the case of objective testing. Ninety-seven percent of those who were aware of objective testing adopted the innovation, but corresponding figures for library reading assignments and class discussion method are 77 percent and 69 percent respectively.

Figure 4-5 shows the percentage of teachers who reported either that their school had adopted the non-individual choice innovations or that they personally had adopted the individual choice innovations. According to Mortimore (1968):

> As these figures do not coincide with purely impressionistic evidence from observations made while visiting Thai schools, they should perhaps be seen as suggesting the propensity of teachers to accept future changes rather than as a measure of past adoption.
>
> The impression that [actual] adoption falls far short of [reported] adoption also suggests that, in future diffusion research conducted in Thai schools, some objective measure of adoption - frequency, intensity, and/or competency of use - be included in the research design.

Teachers were asked to rate each innovation as "very beneficial," "somewhat beneficial," "not very beneficial," or "not at all beneficial." Most of the responses were divided between "very beneficial" and "somewhat beneficial." Figure 4-6 gives the percentage of the 629 sample teachers who rated each of the innovations as "very beneficial." Mortimore (1968) suggests that the teachers' reports of attitudes (Figure 4-6) and adoptions (Figure 4-5) may make Thai teachers seem more innovative than they really are. He suggests three reasons for this phenomenon:

> 1. No attempt was made on the instrument to determine either the extent of knowledge possessed by respondents, or the intensity of innovation use; these knowledge weaknesses of the instrument

Figure 4-5

Reported Personal or School Adoption of Ten Innovations by Sample Teachers

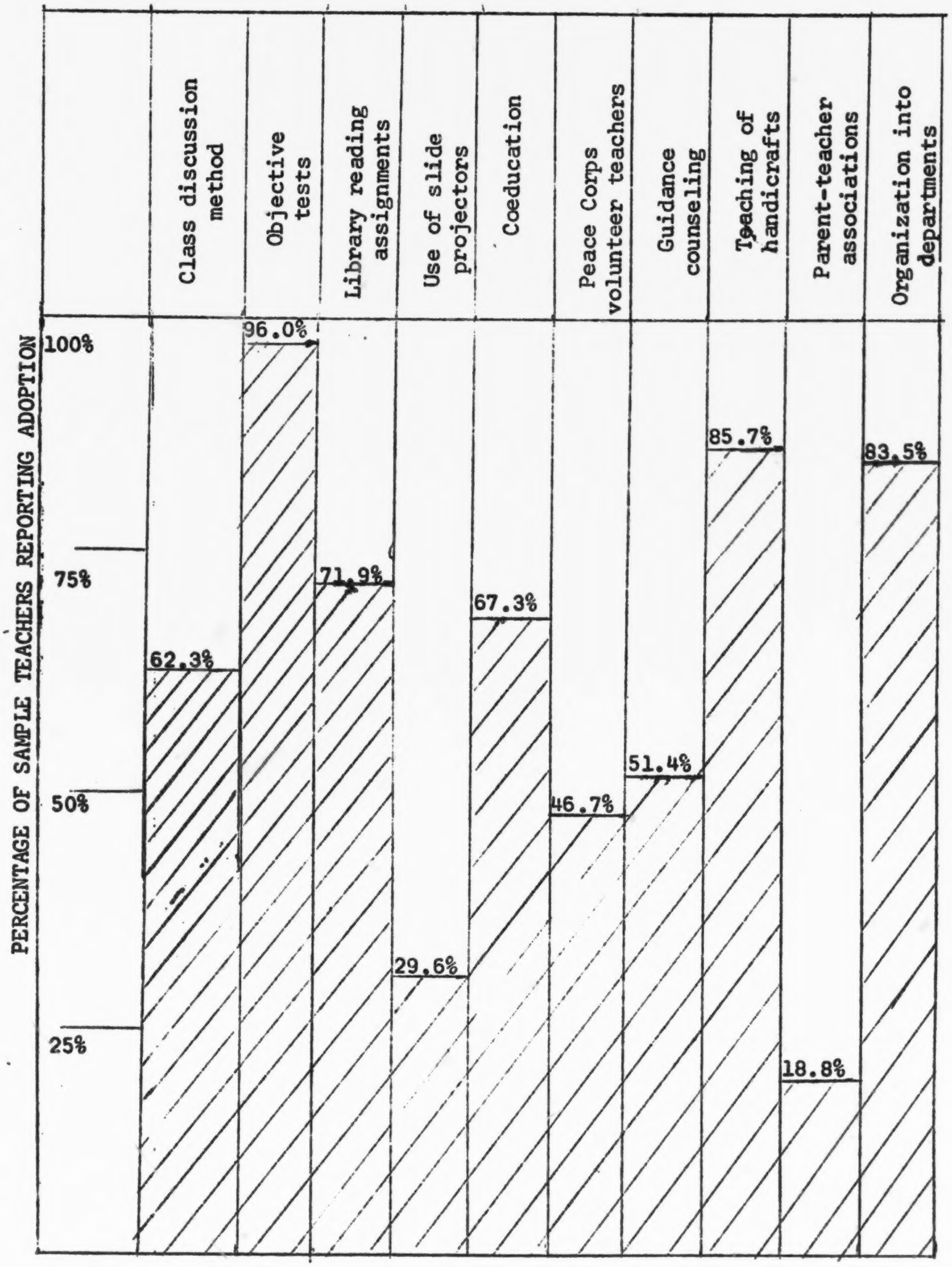
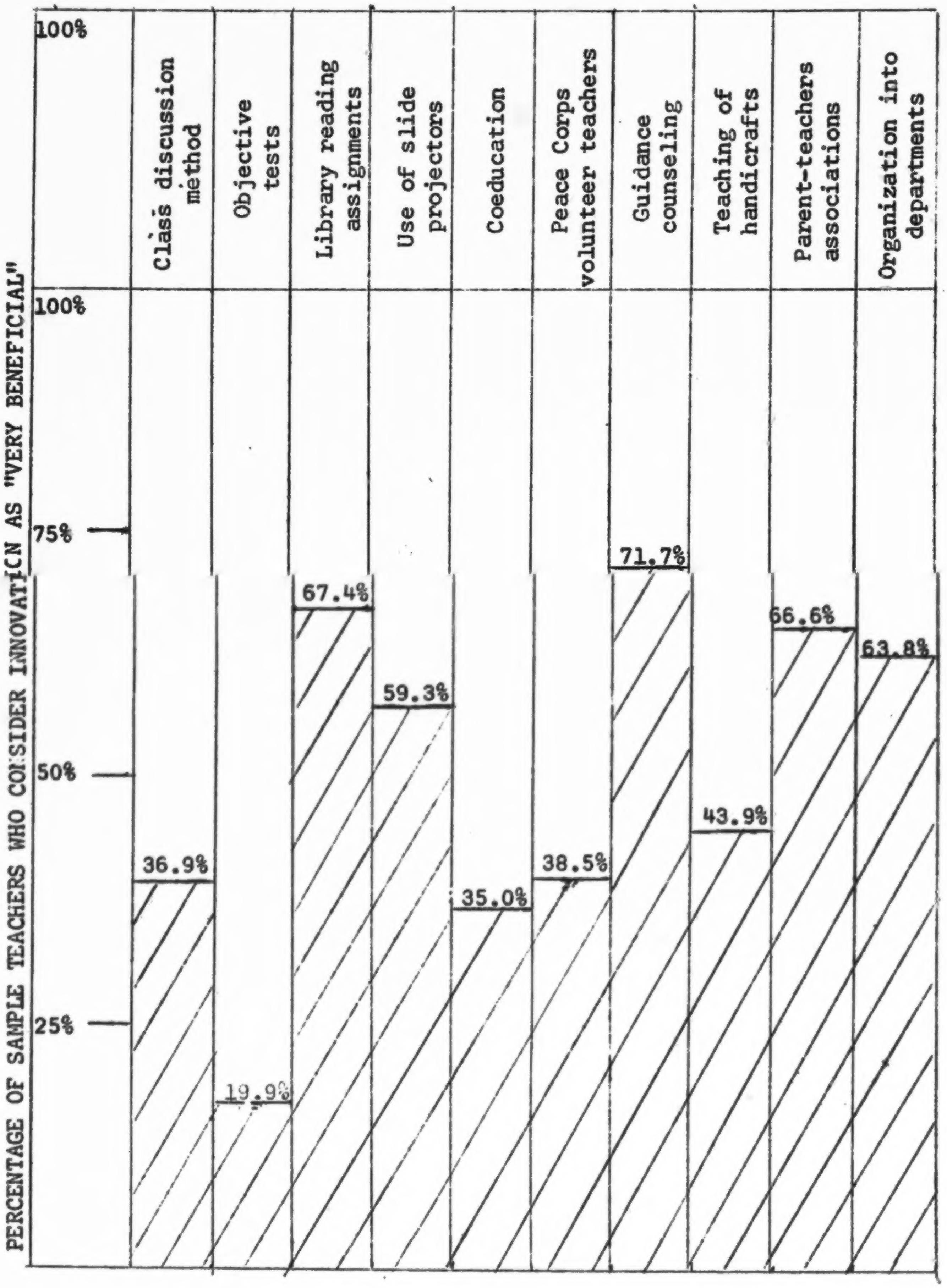


Figure 4-6

Percentage of Sample Teachers Rating Each Innovation as "Very Beneficial"



> may lead, in the first instance, to inflation of "awareness" figures, and in the second, to misunderstanding or misinterpretation of "adoption" figures. Both awareness and adoption, it is here suggested, are continuous rather than dichotomous variables - although in this and other diffusion research literature not employing an innovativeness scale, they have been treated dichotomously.
>
> 2. There can be little question that most Thais tend to treat any paper and pencil exercise as an "examination" or "test" - for which there are supposedly "correct" or "incorrect" answers. (Phillips, 1965, pp. 112ff; Sjoberg, 1960, pp. 285-295). This... characteristic...may well have served in this instance to bias responses toward inflated assessments of awareness, adoption, and perceived beneficiality of innovations. Discussions with Thai educators leave little room for doubt that even those conscientiously committed to the preservation of "traditional" patterns of education are sensitive - and flexible - enough to don a mantle of progressivism when circumstances suggest that this is the "appropriate" position.
>
> 3. ...There is perhaps operative here a variant of the "courtesy bias" (Jones, 1963) so frequently encountered in Southeast Asia...which manifests itself as a propensity on the part of the respondent to provide that answer which the latter senses will most "please" his foreign interrogator. This phenomenon should be classified, not as a habitual tendency to dissimulate or prevaricate, but, rather, as the result of a desire to please by providing answers which the situation suggests the interrogator would "like" to receive. (Phillips, 1965, pp. 70-71). Finally, the prevalence among Thais of a desire to be found by others "attractive" or "appealing" may well lead teachers to falsely represent themselves as members of a "modernizing" elite.

There is a lack of correspondence between the responses reported in Figure 4-5 and those reported in Figure 4-6. It is to be expected that adoption decisions which are not made by teachers will not always be in accord with the attitudes of teachers, but it is surprising to note that objective testing, the most universally adopted of the ten innovations studied, is the innovation least often rated as "very beneficial." This suggests either that the decision to adopt objective testing was not truly left to the individual teachers, or that criteria other than "beneficiality" went into the teachers' decisions.

Some insight into the adoption-decisions of Thai teachers may be gained by considering their perceptions of the advantages and disadvantages of library reading assignments, in Tables 4-13A and 4-13B.

Table 4-13A

Perceived Advantages of Library Reading Assignments by Sample Teachers

Perceived Advantages of Assigned Reading in Library Books	Number of Respondents	Percentage of Total Sample
1. The breadth of knowledge possessed by Thai government secondary school students who regularly read library books is greater than that of students who do not read library books regularly.	458	72.8
2. Assignments of readings in library books serve to improve the reading skill and reading comprehension of Thai government secondary school students.	412	65.5
3. Thai government secondary school students who are assigned reading in library books obtain better understanding of the subject matter than do those who must rely for knowledge upon lectures and textbooks only.	344	54.7
4. Reading the biographies of famous figures in Thai history provides Thai government secondary school students with models which they then emulate.	239	38.0
5. Thai government secondary school students frequently learn more as a result of reading library books than they do if such reading assignments are not made.	219	34.8
6. Thai government secondary school students who read assignments in library books obtain higher scores on examinations than do those students who do not read such assignments.	130	20.7

Table 4-13B

Perceived Disadvantages of Library
Reading Assignments by Sample Teachers

	Perceived Disadvantages of Assigning Reading in Library Books	Number of Respondents	Percentage of Total Sample
1.	The libraries of many Thai government secondary schools contain an insufficient selection and number of books to render reading assignments in library books meaningful.	381	60.6
2.	Thai government secondary school students do not read well enough to derive great benefit from reading assignments in library books.	306	48.7
3.	Many Thai government secondary school teachers find themselves incapable of incorporating outside reading into their classroom work.	268	42.6
4.	The lack of trained librarians in Thai secondary schools serves to reduce the effectiveness of library facilities to the point where such assignments are meaningless.	254	40.4
5.	Many Thai government secondary school teachers do not know how to assign and supervise reading in library books so that students will derive benefit therefrom.	221	35.1
6.	Time spent in reading from library books would be better spent devoted to classroom lectures and exercises.	74	11.8
7.	The reading of library books does not serve to improve the test scores of Thai government secondary school students.	29	4.6

It is paradoxical that even though 306 respondents give student reading deficiencies as a reason why library assignments are not more frequently made, fully 65 percent (412 individuals) concede that such assignments possess the potential of improving reading skills. It is also interesting that teachers do not all perceive this innovation as improving the students' scores on examinations; since both teachers and pupils consider performance on school leaving and other examinations to be of prime importance, one suspects that, were reading assignments viewed as contributing significantly to improved performance on such tests, they would be made much more frequently. And while school libraries are in most cases inadequately equipped, there is every reason to believe that the resources presently available are not being fully utilized.

Correlates of Awareness, Adoption, and Perceived Beneficiality of Innovations

The three main dependent variables used in the correlational analysis were (1) the mean time since awareness of Thai use for the ten innovations studied, adjusted for the length of the subject's teaching experience, (2) the mean time since first use by the teacher for the three individual-choice innovations, adjusted for the length of the subject's teaching experience; and (3) the mean rating of beneficiality for the ten innovations studied. Awareness time and adoption time were correlated .46 for the sample teachers. Perceived beneficiality was correlated .14 with awareness time and .23 with adoption time.

Table 4-14 presents zero-order Pearson product-moment correlation coefficients between various independent and dependent variables. A positive correlation coefficient indicates a direct relationship, and a negative coefficient indicates

Table 4-14

Pearson Zero-Order Correlations Between Independent and Dependent Variables for Sample Teachers
(N=629)

Independent Variables	Dependent Variables		
	Time of Awareness[a]	Time of Adoption[b]	Perceived Beneficiality of Innovations[c]
I. DEMOGRAPHIC AND SOCIOECONOMIC			
A. Parents			
1. Father's education	.016	.022	-.085[d]
2. Mother's education	-.038	.011	-.034
3. Increase of own education over parents' education level	.010	-.016	.057
B. Sex (male)	.003	-.018	-.102
C. Age	-.222	-.063	-.006
D. Income			
1. Government income	-.002	-.056	-.100
2. Non-government income	-.017	-.001	.036
3. Total income	-.008	-.056	-.052
E. Duration of urban residence	-.038	.018	-.047
II. KNOWLEDGE AND EXPERIENCE			
A. Education			
1. Education	.118	.004	-.048
2. College or university study in Thailand	.136	.016	-.045
B. Employment			
1. Length of experience as a teacher			-.050
2. Number of other government secondary schools taught in	-.073	.018	-.039
3. Length of experience as teacher in present school	-.204	-.032	-.034

---

[a] Mean time since awareness of Thai use for the ten innovations studied, adjusted for length of teaching experience.

[b] Mean time since first use by the teacher for the three individual-choice innovations, adjusted for the length of teaching experience.

[c] Mean beneficiality rating for the ten innovations studied.

[d] Underlined coefficients of correlation are significantly different from zero at the 5 percent level of significance.

Table 4-14 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
C. Mass Communication Exposure			
1. General mass media exposure	.052	.138	.183
2. Number of professional journals read	.154	.148	.138
D. Knowledge			
1. Knowledge of Ministry of Education officials	.093	.037	.009
2. Knowledge of other countries	.160	.005	.011
III. ATTITUDES AND BELIEFS			
A. Openmindedness	.107	.026	-.151
B. Need for autonomy	-.023	.037	.062
C. Change orientation	.127	.045	.038
D. Self-rated teaching ability	.041	.140	.085
E. Self-perceived role satisfaction	.004	.093	.143
F. Self-perceived feeling of security in present position	-.033	.003	.113
IV. INSTITUTIONAL RELATIONSHIPS			
A. Relations with superiors			
1. Perceived psychological distance between self and principal	.046	-.009	-.093
2. Perceived psychological distance between other teachers and principal	.047	.002	-.100
3. Perceived degree of own participation in school decision-making	.017	.006	-.003
4. Perceived degree of participation by other teachers in school decision-making	-.022	.015	.067
5. Perceived legitimacy of own participation in school decision-making	.032	.005	.035

Table 4-14 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
6. Perceived principal's rating of subject's teaching ability	.055	.094	.099
7. Perceived change orientation of the principal	.137	.005	-.030
8. Reported frequency of communication with principal about educational matters	.010	.068	.135
9. Perceived frequency of performance feedback from principal to other teachers	-.000	.100	.118
10. Reported frequency of performance feedback from principal to subject	-.005	.079	.149
11. Perceived favorable attitude of principal toward use of library reading assignments[e]	.108	.078	.226
12. Belief that the attitude of the principal should influence the subject's decision to adopt library reading assignments[e]	-.008	.005	.124
13. Reported frequency of communication with principal about library reading assignments[e]	.125	.233	.120
14. Perceived favorable attitudes of Ministry of Education officials toward the use of library reading assignments[e]	.137	.103	.196

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[e] The dependent variables correlated with this variable were, for columns 1 to 3 respectively: (1) time since first awareness of Thai secondary school teachers making reading assignments in library books, adjusted for length of teaching experience, (2) time since first personal use of reading assignments in library books, adjusted for length of teaching experience, and (3) perceived beneficiality of reading assignments in library books.

Table 4-14 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
15. Belief that the attitudes of Ministry of Education officials should influence the subject's decision to adopt library reading assignments[e]	-.031	-.017	.095
16. Perceived favorable attitude of principal toward converting all secondary schools to coeducation[f]	.105	.330	.324
17. Belief that the attitudes of principals should influence the decision to convert all secondary schools to coeducation[f]	.030	.225	.195
18. Perceived favorable attitudes of Ministry of Education officials toward converting all secondary schools to coeducation[f]	.093	.248	.180
19. Belief that the attitudes of Ministry of Education officials should influence the decision to convert all secondary schools to coeducation[f]	.013	.225	.114
B. Relations with Peers			
1. Proportion of close friends who are also teachers	.041	.104	.104
2. Self-designated opinion leadership about new educational practices	.190	.213	.189
3. Perceived cohesiveness of school faculty	.011	.046	.115

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[f] The dependent variables correlated with this variable were, for columns 1 to 3 respectively: (1) time since first awareness of coeducation in Thai government secondary schools, adjusted for length of teaching experience; (2) reported time since the subject's school became coeducational; and (3) perceived beneficiality of coeducation.

Table 4-14 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
4. Reported frequency of communication with other teachers about non-academic school activities	-.035	.031	.030
5. Perceived peer-rating of subject's teaching ability	.014	.115	.148
6. Perceived favorable attitudes of other teachers toward the adoption of new educational practices	-.054	.053	.171
7. Perceived attitudes of other teachers toward the use of library reading assignments[e]	.156	.154	.262
8. Belief that attitudes of other teachers should influence the subject's decision to adopt library reading assignments[e]	-.021	.022	.143
9. Reported frequency of discussion of library reading assignments with other teachers[e]	.154	.279	.153
10. Perceived favorable attitudes of other teachers toward converting all secondary schools to coeducation[f]	.073	.319	.358
11. Belief that the attitudes of teachers should influence the decision to convert all secondary schools to coeducation[f]	.083	.179	.301
12. Reported frequency of discussion with other teachers of coeducation [f]	.060	.174	.118
C. Relations with Subordinates			
1. Perceived student rating of subject's teaching ability	.059	.130	.091

Table 4-14 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Time of Adoption	Perceived Beneficiality of Innovations
2. Perceived favorable attitudes of students toward use of library reading assignments[e]	.130	.190	.160
3. Belief that the attitudes of students should influence the decision to make library reading assignments[e]	.008	.040	.083
4. Perceived favorable attitudes of students toward converting all secondary schools to coeducation[f]	.043	.174	.232
5. Belief that atiitudes of students should influence the decision to convert all secondary schools to coeducation[f]	.073	.228	.342
V. PERCEPTIONS OF INNOVATIONS			
A. Perceived relative advantage to students of library reading assignments[e]	.026	.143	.230
B. Perceived relative advantage to students of coeducation[f]	-.031	.012	.184
C. Perceived functional compatibility to teachers of library reading assignments[e]	.025	-.066	-.030
D. Number of advantages of library reading assignments listed[e]	.159	.118	.176
E. Number of advantages of coeducation listed[f]	.109	.103	.205
F. Number of disadvantages of library reading assignments listed[e]	.021	-.019	-.014
G. Number of disadvantages of coeducation listed[f]	-.009	-.045	-.177

an indirect or inverse relationship. The first independent variable in Table 4-14, for example, is "father's education." This variable is correlated +.015 with "time of awareness," and -.085 with "perceived beneficiality." The positive coefficient in the first instance represents a tendency of teachers with more educated fathers to become aware of innovations earlier than teachers with less educated fathers. The negative correlation with "perceived beneficiality" indicates that teachers with more highly educated fathers tend to perceive innovations as less beneficial. The absolute value of the correlation coefficient is an indication of the intensity of the relationship. Very small correlations, such as that between "father's education" and "time of awareness" are often products of random error rather than of a real relationship between the variables. The underlined correlations, such as the one between "father's education" and "perceived beneficiality," are large enough that we expect at least 95 percent of them to result from real relationships rather than from random error. Even so, most of these "significant" correlations are so low as to have little predictive power.

The data presented in Table 4-14 have been used to draw profiles of those Thai government academic secondary school teachers (1) who are aware of innovations earlier than their peers, (2) who adopt individual-choice educational innovations earlier than their peers, and (3) who perceive educational innovations as relatively more beneficial than do their peers. These profiles are given below.

Early Awareness

The teacher who becomes aware of new educational techniques early tends to be younger than his fellow teachers. He tends to have been at his present job for a shorter length of time. He also tends to have had more education than his fellow teachers. He is more likely to have attended a college or university, he reads more professional journals, and he is better able to identify both Ministry of Education officials and world figures. He is more open-minded than other teachers, and he has a more favorable attitude toward educational change. He tends to see more advantages in innovations like coeducation and library reading assignments. He perceives innovations as more beneficial, and he tends to adopt them sooner than other teachers.

Not only is the early-aware teacher favorably oriented to change, but he tends to see others as having a similar orientation. This is suggested by the correlation between awareness time and perceived change orientation of school principal, and by the correlations between early awareness of specific innovations and the teachers' perceptions of favorable attitudes toward those innovations on the part of principals, Ministry of Education officials, teachers, and students. Teachers who are aware of innovations early, more than other teachers, see themselves as innovation opinion leaders, and they report more frequent discussion of library reading assignments with the principal and with other teachers.

Two cautionary statements must be made in regard to this profile of the early-aware teacher. First, some of the correlation coefficients based on the entire sample of teachers conceal differences between our three subsamples The most important of these differences are given in Table 4-15.

Table 4-15

Correlations with Time of Awareness by Subsamples

Independent Variables	Amphur Schools	Changwad Schools	Bangkok-Thonburi Schools
Education	.143	.321	-.002
Change Orientation	.061	.226	.006
Mass Media Exposure	.111	.149	-.061

Second, the correlations in Table 4-14 are based on the awareness times which were adjusted for the length of the teacher's teaching experience. This means that time of awareness in Table 4-14 is, in part, a psychological variable. We have drawn the profile of the type of person who will tend to become aware of innovations quickly. If, instead, we look at the correlations with unadjusted awareness scores, we find that, as one might expect, older teachers and teachers who have been in the school longer have been aware of the innovations longer.

Early Adoption

The relatively innovative teacher - the teacher who tends to adopt innovations earlier than his peers - tends to be aware of innovations earlier. He has more general mass media exposure and more professional journal exposure than other teachers. He appears to see himself as a highly competent teacher and to feel that his principal, his fellow teachers, and his students also have a high opinion of his teaching ability. He tends to be satisfied with his role as a teacher and to find his closest friends among his teaching colleagues.

The innovative teacher tends to perceive innovations as beneficial. The teacher who adopts such innovations as library reading assignments and coeducation early tends to perceive more advantages in these innovations. This innovative teacher tends to believe that others also have favorable attitudes toward innovations, as shown by the correlations between early adoption of library reading assignments and coeducation and teachers' perceptions of favorable attitudes held by principals, other teachers, and students toward these innovations. He sees himself as involved in more communication about educational innovations than his fellow teachers. Thus he tends to be high on self-designated opinion leadership and reported performance feedback from the principal. Teachers early in adopting reading assignments report frequent communication about this innovation with their principal and their fellow teachers.

It should be emphasized that adoption time, like awareness time, was adjusted for length of teaching experience, and that the profile drawn above describes the teacher who tends to be innovative rather than the teacher who actually adopts the innovations first. The only significant difference between subsamples in the correlations with adoption time was for the teachers' change orientation scores. Change orientation was correlated with adoption time -.07 in amphur schools, -.09 in Bangkok-Thonburi schools, and +.21 in changwad schools.

Perceived Beneficiality of Innovations

The secondary school teacher who tends to see innovations as very beneficial is more often a woman than a man. In Bangkok and Thonburi schools she (or he) is likely to be older than other teachers, but in amphur and changwad schools, age is not a good predictor of perceived beneficiality. Her father will tend to be less educated than the fathers of other teachers, and her teaching salary will tend to be lower than that of other teachers. She is more likely than other teachers to be exposed to the mass media and to professional journals; she tends to become aware of innovations earlier; and she tends to adopt educational innovations earlier. She tends to be less openminded than other teachers.

This teacher who perceives innovations as beneficial tends to think she is a good teacher, and believes that her principal, fellow teachers and students also think she is a good teacher. She tends to feel satisfied with her role as a teacher, secure in her present position, and - especially in changwad schools - to perceive less psychological distance between the principal and the school faculty, including herself. Her closest friends tend to be teachers, and she perceives her school faculty as relatively cohesive. She tends to be high in self-designated innovation opinion leadership, especially if she is in an amphur or changwad school. She tends to communicate more with the principal about educational matters, especially if she is in a changwad school, and to perceive the principal as giving more performance feedback to herself and to the other teachers. If she perceives an innovation like coeducation or library reading assignments to be beneficial, she is more likely than other teachers to engage in discussions about that innovation. The teacher who sees these innovations as beneficial tends to believe that others - Ministry officials, her principal, other teachers, and students - also perceive these innovations as beneficial, and that the attitudes of all those people should influence the decision to adopt or not to adopt these innovations.

Summary of Correlational Findings

Those who wish to encourage educational change hope to find teachers who possess all three of the qualities represented by our dependent variables, early awareness, innovativeness, and favorable attitudes toward the innovations. The variables in Table 4-14 which are significantly correlated with all three of these dependent variables are:

1. Number of professional journals read,
2. Perceived favorable attitudes of the principal toward the use of library reading assignments and toward the conversion of schools to coeducation,*
3. Reported frequency of communication with the principal about library reading assignments,*
4. Perceived favorable attitudes of Ministry of Education officials toward the use of library reading assignments and toward the conversion of schools to coeducation,*
5. Belief that the attitude of Ministry officials should influence the decision to convert schools to coeducation,*
6. Self-designated opinion leadership about new educational practices,

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*These independent variables are significantly correlated with the dependent variables specific to the innovations named.

7. Perceived favorable attitude of other teachers toward the use of library reading assignments,*
8. Reported frequency of discussion of library reading assignments with other teachers,*
9. Belief that the attitudes of teachers should influence the decision to convert schools to coeducation,*
10. Perceived favorable attitude of students toward the use of library reading assignments,*
11. Number of advantages of library reading assignments and of coeducation listed by the teacher.*

The correlations between the dependent variables specific to library reading assignments and coeducation and the independent variables involving the teacher's perceptions of the attitudes toward these innovations held by his superiors, his peers, and his students are almost without exception positive. These correlations confirm the impression that social relationships play a major role in the adoptive behavior of Thai teachers. This is particularly evident in our profile of the teacher who claims to perceive innovations as beneficial. This teacher perceives the school faculty members - teachers and principal - as psychologically close to each other and in close communication with each other, and he perceives himself as accepted by others and active in the school communication network. He considers it important to consider the attitudes of others, and he perceives such attitudes as generally favorable toward innovations.

The teacher who adopts individual-choice innovations readily seems to share many of the social perceptions of the teacher who tends to perceive innovations as beneficial. Social perceptions do not, however, seem to be as useful in describing the teacher who becomes aware of innovations quickly. This teacher is younger, better educated, and more recently employed in the school, and apparently has not become fully involved in the school as a social system. The teacher who is aware of innovations early tends to be openminded, whereas the teacher who perceives innovations as beneficial tends to be closed-minded.

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*These independent variables are significantly correlated with the dependent variables specific to the innovations named.

Selected independent variables which were significantly correlated with one or more of the dependent variables were submitted to least-square multiple regression (least-square delete) analysis. In this analysis the independent variable contributing the least to variability in the dependent variable was "deleted" first, that which contributed least among those remaining was "deleted" next, etc. This process was continued until all of the variables remaining made a significant contribution to the multiple regression line (i.e., until the beta weight of each remaining variable had a chance probability of .05 or less). The variables which met this criterion in predicting time of awareness were: (1) years of teaching experience, (2) innovation opinion leadership, (3) perceived change orientation of the principal, and (4) number of professional journals read. The multiple correlation of these four variables with time of awareness was .35; 12.4 percent of the variance in time of awareness was predictable from knowledge of the four independent variables. The variables which met the criterion in predicting time of adoption were: (1) innovation opinion leadership, (2) general mass media exposure, and (3) age. Together they predicted 6.4 percent of the variance; the multiple correlation was .25. The variables which met the criterion in predicting perceived beneficiality of innovations were: (1) innovation opinion leadership, (2) perception of the attitude of other teachers toward the use of library reading assignments, (3) general mass media exposure, (4) open/closed-mindedness, (5) number of professional journals read, and (6) reported frequency of performance feedback from the principal to the respondent. Together these variables predicted 11.2 percent of the variance in perceived beneficiality; the multiple correlation was .33.

Conclusions

We have tried, in this chapter, to describe the teachers in Thai government academic secondary schools, and to differentiate between those teachers who tend to become aware of and to adopt educational innovations early and to perceive them as beneficial and those who do not. Though many of the correlation coefficients which summarize the differences between more and less innovative teachers are statistically significant, almost none are large enough to have much predictive value. Several factors seem to have contributed to this failure.

One explanation of the low correlation coefficients lies in the method of analysis employed. Since teachers from many schools were pooled in a total sample, and included in a single correlation coefficient, the greater similarity of all teachers in a given school in awareness and adoption is ignored. This may result in more modest overall correlations. A future report from this Project will focus on the relationships between the characteristics of school faculties and the diffusion of educational innovations. In other words, this future analysis will consider so-called "system effects" on diffusion.*

A second explanation of the low correlation coefficients lies in the insensitivity of our dependent variable measures. In particular, the perceived beneficiality items tended to produce little variance. Most teachers responded either "very beneficial" or "somewhat beneficial," making the items in effect dichotomous. The intercorrelations among these items were not high enough to make their sum a reliable measure of perceived beneficiality of innovations in general. Mortimore (1968) suggests that Thai teachers are very homogeneous in their orientation to change:

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*A detailed consideration of system effects may be found in the last chapter of this report.

> Other than the fact that it serves to justify the considerable effort thus far invested in data collection, this...hypothesis has additional merits to recommend its serious consideration. It would, for one thing, go far to explain the remarkably low first-order correlations...It would also tend to substantiate impressionistic evidence, obtained while visiting a large number of study schools, that even the comparatively innovative educator in Thailand required substantial support from peers, superiors, and subordinates before committing himself to accept change. Stated differently, Thai educators as a group are relatively disinclined to take risks or set themselves apart from peers by indulging in experimentation; in this society characterized by a considerable homogeneity of world-view, the still largely conservative "innovator" is difficult to distinguish from the mass of those even more fully wedded to continuation of past practices. Identification or differentiation of these "innovators" from the mass into which they so nearly blend requires the development of much more sophisticated instruments than those which have served adequately in Western societies where greater heterogeneity of world-view among members results in a broader dispersion of attitudes.

Another possibility, of course, is that we may have looked at the wrong variables. Mortimore (1968) suggests that degree of awareness (i.e., information level about the innovation) may be more important than time of awareness, and that frequency or intensity of innovation use may be more important than time of adoption. Similarly our expectations drawn from studies of the diffusion process in the U.S. may have led us to concentrate on the wrong variables for the Thai environment.

Lastly - pertaining to measurement of some independent and dependent variables - there remains the question of response validity. Thai informants suggest that the researcher must be very cautious in relying on questionnaire responses. Thais quite candidly characterize their fellow countrymen as "devious," "untrustworthy," or "unpredictable." Phillips (1965, p. 164) encountered the same reaction among his Thai informants, quoting one as saying, "We /Thai/ people have many minds, different hearts. Whatever others say, we can't be sure whether it is true or not." In everyday conversation, the Thai is more concerned with the form than with the content of his speech; there appears to be operative an expectation among the Thai that the listener will discount the statement as exaggerated in any case, leaving no reason for one to edit his own statements for veracity.

Despite its shortcomings, this analysis, it is felt, has contributed substantially to our understanding of the attitudes toward educational innovations held by Thai government secondary school teachers. It is apparent, for example, that while we may not judge these teachers as adequately informed about innovations recently introduced by either foreign scholars or Thai educationists, some minimum level of awareness has been achieved with encouraging rapidity. Even more important, perhaps, there is evidence that both Ministry officials and individual teachers now realize the importance of teacher awareness and have begun to exploit professional journals, in-service conferences and extension-type programs to improve it.

Individual teacher adoption of improved educational practices should move rather rapidly once the Ministry is able to provide educational personnel with the necessary skills and materials. Generally positive attitudes toward the beneficiality of change and improvement attest to the favorable climate which exists within teacher ranks for the future introduction of improved practices.

Chapter V

DIFFUSION OF INNOVATIONS AMONG PRINCIPALS

How decisions to adopt or reject new ideas are made by organizational members, such as Thai school principals, can provide valuable insight into the influence of authority and social structure on individual decisions. The purpose of this chapter is to attempt to determine: (1) how Thai secondary school principals gain awareness and knowledge of new educational ideas, (2) how they develop attitudes toward educational innovations, and (3) how they decide to adopt or reject new educational practices.

Once information about an innovation reaches an organization, characteristics of the organization itself and of its leaders explain a large part of the variance in the innovativeness of that organization. This chapter is an attempt to specify some of the important structural and personal characteristics which influence the innovativeness of Thai government secondary schools.

Description of the Thai Principals

The following is a brief description of the principals of the 38 sample schools.

Independent Variables

The mean age of the principals in the sample is 43. None is less than 25 years of age or more than 59 years. A majority of the principals (52.5 percent) fell in the 35-44 age bracket.

Twenty-one of the sample principals (55 percent), when asked about the highest educational level they had attained, said they had earned a secondary school teachers certificate at a teacher-training institution. Thirteen others (34 percent) had gone on to earn bachelor's degrees at Thai colleges or universities, most often at Prasarn Mitr College of Education. Two teachers reported having master's degrees; one reported having only a high school diploma. Two principals indicated that they had studied in colleges or universities outside Thailand, one at Silliman University in the Philippines and one at the University of Pittsburgh in the United States.

All but three of the 38 principals in the sample have had experience as teachers in government secondary schools. Approximately 40 percent say that they had more than ten years experience as secondary school teachers. The typical principal had his experience as a secondary school principal within a single school. Only 13 principals (34 percent) indicated that they had served more than one school. Two respondents indicated that they had held the principal's post in three separate government secondary schools.

An individual's cosmopoliteness, or orientation to a social system external to his own, is often measured by the number of his trips outside his local community or his exposure to communication originating outside his own locale. In this study, principals were asked if they had ever travelled outside of Thailand. Approximately 29 percent indicated they had travelled in one or more countries. The most frequent response of these 11 respondents was that they had travelled in one other country, and this country was most often Laos or Malaysia; two principals said they had travelled in the United States. Study was the most frequent purpose of foreign travel.

Respondents also were asked if, within the past year, they had attended any meetings of government secondary school principals in changwads other than the one in which their school was located. Twelve principals (32 percent) said they had visited other changwads for this purpose, and 37 principals (97 percent) said they had attended meetings of principals in Bangkok. Of the 38 principals sampled, 33 said that within the past year they had visited one or more other principals in their offices. A near majority, 45 percent, of the principals said that their five best friends also were secondary school principals.

When asked to rank those persons whose opinion of their administrative ability they consider to be most important, 13 principals rank "students" first, while six rate "school teachers" first, and six put "changwad education officers" first; 12 principals rank "school teachers" second in importance.

The typical principal of a secondary school of Thailand reads one or more newspapers daily, listens to the radio once or more each day, owns a radio set of his own, and listens to the Ministry of Education radio station (Vithayu Suksa) once or more per week. Nearly all of the principals responded that they had read from the *Wittayasarn* professional journal within the past 30 days, while 25 indicated that they had been exposed to the *Secondary School Journal*, and 11 said they had looked at *Wittayacharn*.

Dependent Variables

Almost all of the sample principals reported that they were aware of Thai use of each of the ten innovations studied. Their sources for this awareness are indicated in Table 5-1. Table 5-1 gives their responses when they were asked from what sources they first heard of Thai secondary school teachers giving library reading assignments and of Thai government secondary schools being organized on a coeducational basis.

Though a majority of principals heard of the innovations directly from the Ministry of Education through publications and directives, it is interesting to note that sources outside the educational hierarchy (college instructors)

Table 5-1

First Sources of Awareness for Sample Principals

Source (Channel) of Awareness of the Innovation	Library Reading		Coeducation	
	Frequency	Percentage	Frequency	Percentage
From one of my college instructors	7	18.4	5	13.2
From a teacher in a secondary school	4	10.5	6	15.8
From the principal of a secondary school where I taught	3	7.9	4	10.5
From a Ministry of Education publication	19	50.0	14	36.8
From a Ministry of Education directive	0	0.0	7	18.4
From a school supervisor (inspector)	4	10.5	0	0.0
At a conference	0	0.0	0	0.0
From an amphur education officer	0	0.0	0	0.0
From a changwad education officer	0	0.0	0	0.0
From a college textbook	1	2.6	2	5.3
While studying abroad	0	0.0	0	0.0
No response	0	0.0	0	0.0
TOTAL	38	100.0	38	100.0

and below the principal in the hierarchy (teachers) played a significant role. It is also interesting to note that the changwad education officers, nominally between the principals and the Ministry in the hierarchy, did not play a role in the diffusion of awareness for these two innovations.

Though the principals in the sample are well aware of the innovations studied, they can not all report that the innovations have been tried in their schools, as indicated in Table 5-2.

Table 5-2

Adoption of Innovations by Sample Schools

Innovation	Principals Reporting School Use	
	Frequency	Percentage
Class discussion method	29	76.3
Objective tests	37	97.4
Library reading assignments	27	71.1

(Continued)

Table 5-2 (continued)

Innovation	Principals Reporting School Use	
	Frequency	Percentage
Available slide projectors	10	26.3
Coeducation	31	81.6
Peace Corps volunteer teachers	14	36.8
Organization into departments	26	68.4
Guidance counseling	24	63.2
Teaching of handicrafts	34	89.5
Parent-teacher associations	4	10.5

Figure 5-1 looks at the diffusion of one innovation - library reading assignments - over a ten year period. Cumulative frequency curves indicate the increasing awareness by principals of Thai use of the innovation, the increasing availability of library resources (books, rooms, and trained personnel), and the increasing use of library reading assignments by teachers as perceived by the principal.

Awareness time was measured by responses to the question: "About how many years ago did you first hear that some Thai government secondary school teachers require that their students read assignments in library books?"

As Figure 5-1 indicates, 18 percent of the principals first heard of the innovation more than ten years ago; 26 percent had heard nine or ten years ago; 40 percent had heard seven or eight years before the study was conducted; 61 percent had learned of the innovation five or six years before; and 92 percent of all principals reported that they had knowledge of the innovation at least three or four years before they were questioned. Of the 37 principals who responded to this question, all indicated that they became aware of the innovation at least one or two years before the study began.

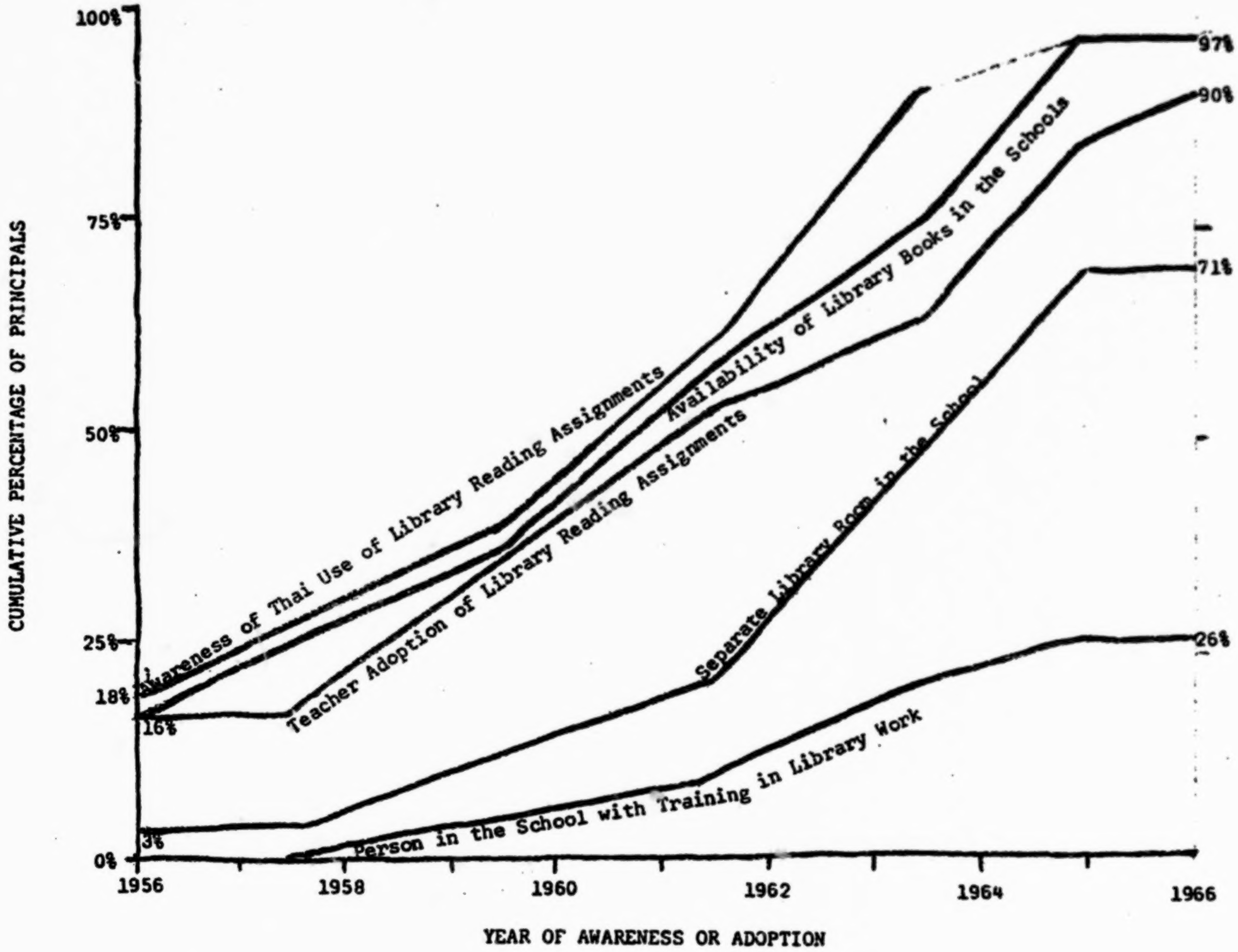

Figure 5-1. Awareness and Adoption of Library Facilities and Reading Assignments Reported by Sample Principals

Adoption time for library books (innovativeness of the organization) was measured by responses to the question: "About how many years ago did this school first acquire library books?" It should be noted at this point that the awareness question and the adoption question seek information on two different, though related, innovations. In one instance, the principal is asked for his perception of the use of library books by teachers in Thai government secondary schools. In the latter question he is asked about the availability of books in his own organization. Of course, even though books are available in the school system, the individual teachers of the system may not use those books. In fact, though 37 principals indicated that their schools did have books, many for more than ten years, eleven said that most of the teachers in their schools were not requiring their students to read from library books.

The cumulative adoption curve in Figure 5-1 indicates that 16 percent of the principals responded that their schools had acquired library books more than ten years before the study began. Fifty-eight percent of the schools had purchased library books five or six years earlier and 76 percent had books three or four years before the question was asked. Of 37 principals responding, all indicated that their schools had adopted library books at least one or two years before they were questioned. Thus it can be seen that library books tended to become available in the schools soon after the principals became aware of Thai use of library reading assignments. Figure 5-1 shows that two related innovations which indicate greater organizational involvement in the innovation - trained library personnel and separate rooms for library books - are diffusing more slowly.

The cumulative awareness and adoption curves for coeducational secondary schools are presented graphically in Figure 5-2. As the upper curve indicates, 70 percent of the principals indicated that they had heard that "some Thai Government Secondary Schools" were coeducational more than ten years before the study. One hundred percent of the 37 responding said that they had heard of the innovation five or six years before being asked the question.

Adoption time, or innovativeness of the organization, on this innovation was measured by the question: "About how many years ago was this school first organized on a coeducational basis?" Though 70 percent of the principals said they knew of the innovation more than ten years before, only 31 percent reported that their schools had adopted it more than ten years ago. Less than half who knew of the innovation prior to 1966 had adopted it in their own organizations. At the time of the study in 1966, seven principals (20 percent) indicated that their schools had not adopted coeducation, though 97 percent said they were aware of the innovation.

Like the teachers, the principals tended to rate all the innovations studied as "very beneficial" or "somewhat beneficial." The percentages rating each innovation as "very beneficial" are given in Table 5-3.

Table 5-3

Beneficiality Ratings of Innovations by Sample Principals

Innovation	Principals Rating Innovation "Very Beneficial"	
	Frequency	Percentage
Class discussion method	15	39.5
Objective tests	13	34.2
Library reading assignments	26	68.4
Use of slide projectors	25	65.8
Coeducation	20	52.6
Peace Corps volunteer teachers	14	36.8
Organization into departments	34	89.5
Guidance counseling	31	81.6
Teaching of handicrafts	23	60.5
Parent-teacher associations	22	57.9

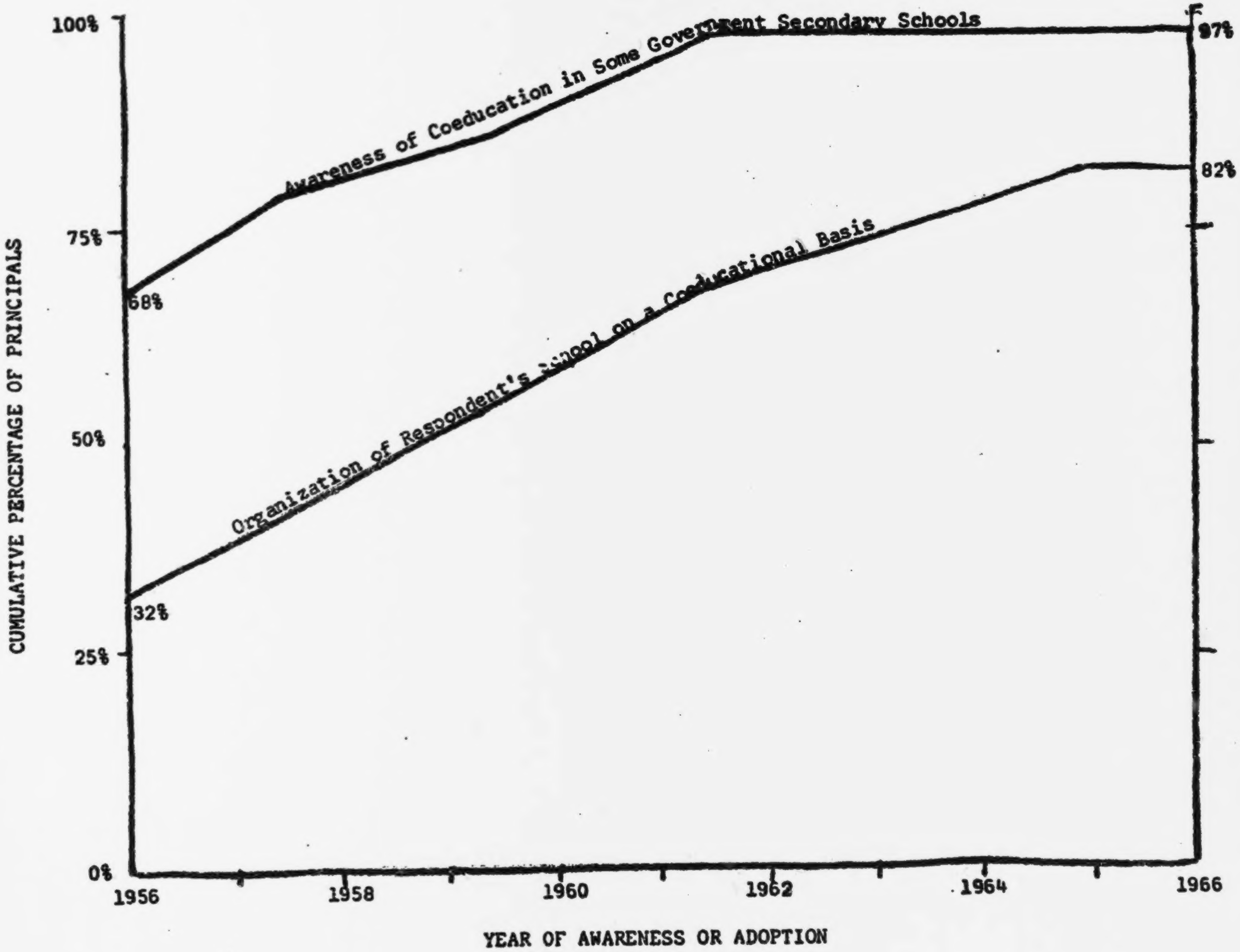

Figure 5-2. Awareness and Adoption of Coeducation Reported by Sample Principals

Correlates of Awareness, School Adoption, Perceived Teacher Adoption, and Perceived Beneficiality of Innovations

The following section of this chapter reports the zero-order Pearson product-moment correlation coefficients obtained between the four dependent variables (time of awareness, time of school adoption, perceived time of teacher adoption, and perceived beneficiality of innovations) and certain selected independent variables.

Time of awareness was correlated .30 with the index of school adoption time and .34 with the index of perceived adoption by teachers. The correlation between the two adoption indices was .53 (with 38 subjects, a correlation coefficient of .32 is significant at the .05 level). The index of perceived beneficiality of innovations was not significantly correlated with the time of awareness, time of school adoption, or perceived time of teacher adoption (the correlation coefficients were .03, .11, and .07 respectively).

Correlation coefficients reported in Table 5-4 are indices of the relationships between the dependent variables and the independent variables for the random sample of 38 Thai government secondary school principals.

On the basis of significant correlations presented in Table 5-4, it is possible to sketch profiles of the secondary school principals who are relatively early in knowledge or awareness of educational innovations, who supervise innovative schools, and who feel that educational innovations are especially beneficial.

Early Awareness

The Thai principal who tends to become aware of educational innovations sooner than his peers also tends to have a higher government income and a higher total income than other school principals. He tends to have more education

Table 5-4

Pearson Zero-Order Correlations Between Independent and Dependent Variables for Sample Principals (N=38)

Independent Variables	Dependent Variables			
	Time of Awareness[a]	Time of School Adoption[b]	Perceived Time of Teacher Adoption[c]	Perceived Beneficiality of Innovation[d]
I. DEMOGRAPHIC AND SOCIOECONOMIC				
A. Parents				
1. Father's education	.096	.006	-.060	.174
2. Mother's education	.192	-.023	-.161	.197
3. Increase of own education over parents' educational level	.066	.069	.210	-.249
B. Sex (male)	.167	.205	.619[e]	.306
C. Age	.051	.339	.358	-.023
D. Income				
1. Government income	.427	.470	.451	.005
2. Non-government income	-.032	.086	.207	.437
3. Total income	.344	.445	.423	.121
E. Residence				
1. Duration of urban residence	.054	.050	.252	.135
2. Proportion of life in urban area	.166	-.068	.206	.175
II. KNOWLEDGE AND EXPERIENCE				
A. Education				
1. Education	.412	.119	.167	-.144
2. College or university study in Thailand	.211	-.015	.105	-.219

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[a] Mean time since awareness of Thai use for the ten innovations studied.

[b] Mean time since reported school adoption for eight non-individual-choice innovations.

[c] Mean time since perceived teacher adoption for three individual-choice innovations.

[d] Mean beneficiality rating for the ten innovations studied.

[e] Underlined coefficients of correlation are significantly different from zero at the 5 percent level of confidence.

Table 5-4 (continued)

Independent Variables	Dependent Variables			
	Time of Awareness	Time of School Adoption	Perceived Time of Teacher Adoption	Perceived Beneficiality of Innovation
B. Number of foreign countries visited	.162	.389	.466	.164
C. Employment				
1. Length of experience as a government school teacher	.257	.106	.271	-.005
2. Length of experience as a secondary school principal	.033	.329	.301	.102
3. Length of experience as principal in present school	.044	.315	.113	.245
D. Mass Communication Exposure				
1. General mass media exposure	.095	.351	-.002	.183
2. Number of professional journals read	-.032	.189	.297	.201
E. Knowledge				
1. Knowledge of other countries	.390	.068	.231	.046
2. Knowledge of diffusion strategies	-.109	.018	.009	.280
III. ATTITUDES AND BELIEFS				
A. Openmindedness	.238	-.152	.144	-.425
B. Need for autonomy	-.077	-.039	-.040	-.187
C. Change orientation	.128	-.005	.119	.010
D. Self-rated administrative ability	.200	.429	.351	.145

Table 5-4 (continued)

Independent Variables	Dependent Variables			
	Time of Awareness	Time of School Adoption	Perceived Time of Teacher Adoption	Perceived Beneficiality of Innovation
IV. INSTITUTIONAL RELATIONSHIPS				
A. Relations with superiors				
1. Perceived psychological distance between self and changwad education officer (C.E.O.)[f]	.344	.056	.128	.153
2. Perceived degree of participation in decision-making with C.E.O.[f]	-.146	-.060	.130	.020
3. Perceived change orientation of C.E.O.[f]	.299	.300	.252	-.227
4. Perceived frequency of performance feedback from C.E.O. to self[f]	-.337	.014	-.031	-.067
5. Reported frequency of meetings with C.E.O.[f]	.185	.302	.422	.103
6. Reported frequency of meetings with Department of Secondary Education personnel	.116	.378	.209	.079
7. Time since awareness of Ministry of Education support for school libraries[g]	.201	.136	.055	.293
8. Perceived favorable attitudes of Ministry of Education officials to library reading assignments[g]	.123	.147	.216	.225
9. Perceived favorable attitude of C.E.O. to library reading assignments.[f,g]	.108	-.113	.111	.131

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[f] Correlations involving this variable are based on only thirty-four principals. Since the changwad education officer does not play a role in the administration of secondary schools in Bangkok and Thonburi, the four principals from schools in Bangkok and Thonburi were not included in the analysis of this variable.

[g] The dependent variables correlated with this variable were, for columns 1 to 4 respectively: (1) time since first awareness of Thai secondary school teachers making reading assignments in library books; (2) time since the school first obtained library books; (3) time since first awareness of teachers in the school making reading assignments in library books; and (4) perceived beneficiality of library reading assignments.

Table 5-4 (continued)

Independent Variables	Dependent Variables			
	Time of Awareness	Time of School Adoption	Perceived Time of Teacher Adoption	Perceived Beneficiality of Innovation
10. Belief that attitudes of C.E.O.'s and Ministry of Education officials should influence the decision to adopt library reading assignments[f,g]	-.243	.078	-.061	.263
11. Perceived favorable attitude of Ministry of Education officials toward converting all government secondary schools to coeducation[h]	.254	.424		.105
12. Perceived favorable attitude of C.E.O. toward converting all government seocndary schools to coeducation[f,h]	.250	.358		.114
13. Belief that attitudes of C.E.O.'s and Ministry of Education officials should influence the decision to convert all government secondary schools to coeducation[f,h]	.219	.296		.299
B. Relations with Peers				
1. Proportion of close friends who are principals	.311	.065	.118	.041
2. Self-designated opinion leadership among peers about new educational practices	.243	.096	.150	.030
3. Frequency of professional meeting attendance	.156	-.132	-.305	.260
4. Number of other principals communicated with	.258	.477	.364	.099
5. Frequency of meetings with people from Thai colleges or universities	.173	.477	.436	.019

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[h] The dependent variables correlated with this variable were, for columns 1, 2, and 4 respectively: (1) time since first awareness of coeducation in Thai government secondary schools; (2) time since the school became coeducational; and (4) perceived beneficiality of coeducation.

Table 5-4 (continued)

Independent Variables	Dependent Variables			
	Time of Awareness	Time of School Adoption	Perceived Time of Teacher Adoption	Perceived Beneficiality of Innovation
6. Perceived attitude of other principals toward library reading assignments[g]	.042	.103	.163	.483
7. Belief that attitudes of principals should influence the decision to require library reading assignments[g]	-.260	.053	.074	.314
8. Perceived favorable attitudes of other principals toward converting all government secondary schools to coeducation[h]	.157	.139		-.028
9. Belief that attitudes of principals should influence the decision to convert all government secondary schools to coeducation[h]	.171	.354		.130
10. Reported frequency of discussion with other principals of converting all government secondary schools to coeducation[h]	.279	.025		.162
C. Relations with Subordinates				
1. Perceived psychological distance maintained between self and school faculty	.037	.131	.161	-.418
2. Perceived degree of faculty participation in school decision-making	-.073	-.152	-.312	.048
3. Perceived legitimacy of faculty participation in school decision-making	.068	-.105	.004	-.167
4. Reported frequency of performance feedback from self to school faculty	.177	.082	.198	.290
5. Reported frequency of meetings with school faculty to discuss educational problems	.069	.410	.301	-.049

Table 5-4 (continued)

Independent Variables	Dependent Variables			
	Time of Awareness	Time of School Adoption	Perceived Time of Teacher Adoption	Perceived Beneficiality of Innovation
6. Self-designated in-school opinion leadership about new educational practices	.203	-.004	.235	-.160
7. Perceived favorable attitude of school faculty to library reading assignments[g]	.204	.028	.358	.248
8. Perceived favorable attitudes of students to library reading assignments[g]	-.130	-.098	.170	.310
9. Belief that attitude of school faculty should influence the decision to adopt library reading assignments[g]	-.351	-.003	.137	.256
10. Belief that attitudes of students should influence the decision to adopt library reading assignments[g]	-.252	-.062	-.101	.222
11. Reported frequency of discussion of library reading assignments with school faculty[g]	.065	.005	.447	.388
12. Perceived favorable attitude of school faculty toward converting all government secondary schools to coeducation[h]	.095	.349		.243
13. Perceived favorable attitudes of students toward converting all government secondary schools to coeducation[h]	.270	.409		.062
14. Belief that attitude of school faculty should influence the decision to convert all government secondary schools to coeducation[h]	.267	.417		.151

Table 5-4 (continued)

Independent Variables	Dependent Variables			
	Time of Awareness	Time of School Adoption	Perceived Time of Teacher Adoption	Perceived Beneficiality of Innovations
15. Reported frequency of discussion of coeducation with school faculty[h]	.238	.037		.192
16. Belief that attitudes of students should influence the decision to convert all government secondary schools to coeducation[h]	.141	.169		.254
V. PERCEPTIONS OF INNOVATIONS				
A. Perceived relative advantage to students of library reading assignments[g]	-.269	-.012	.122	.259
B. Perceived relative advantage to students of coeducation[h]	.130	.247		.174
C. Number of advantages of library reading assignments listed[g]	.273	.101	.204	.278
D. Number of advantages of coeducation listed[h]	.120	.236		.006
E. Number of disadvantages of library reading assignments listed[g]	.533	-.060	-.013	.188
F. Number of disadvantages of coeducation listed[h]	-.226	-.226		-.330

than his peers and more knowledge of other countries. He also tends to perceive a greater psychological distance between himself and his changwad education officer.

Interestingly, the principal who is aware early of Thai use of library reading assignments tends to believe that the attitudes of school faculty members should not influence the decision to adopt library reading assignments. He is also able to cite a higher number of disadvantages of library reading assignments than other principals.

Early School Adoption

The Thai principal who supervises a more innovative secondary school (based upon time of school adoption of new educational ideas), tends to be older and to have more experience as a principal than respondents in less innovative schools. He also tends to have significantly higher government income and total income than principals from less innovative institutions. He is more likely to have visited foreign countries, and he tends to communicate more frequently with other principals. This principal also has significantly more frequent meetings with persons from Thai colleges or universities. In addition, he has more exposure to the mass media than principals of secondary schools which adopt innovations later.

The principal of an innovative organization is likely to rate his own administrative ability significantly higher than principals of other schools rate theirs. He reports having had more frequent meetings with personnel of the Department of Secondary Education and more frequent meetings with his school faculty to discuss educational problems.

A principal whose school was relatively early in becoming coeducational is likely to believe that his attitude and the attitudes of his teachers should influence the decision to convert secondary schools to coeducation. He tends to perceive more favorable attitudes toward converting schools to coeducation on the part of changwad education officers, Ministry of Education officials, teachers, and students.

Perceived Early Teacher Adoption

The principal who perceives that the faculty of his school adopted three individual choice innovations earlier than faculties of other schools tends to be a male, older than other principals, with a higher government income and total income. He is more likely to have travelled in foreign countries. He has more meetings with persons from Thai colleges or universities, and he communicates more with other secondary school principals. He reports more frequent meetings with his changwad education officer, and he rates his administrative ability relatively highly. The principal who reports early teacher adoption of library reading assignments in his school says that he has more frequent discussions with his school faculty about library reading assignments, and that teachers in his school have favorable attitudes toward this innovation.

Perceived Beneficiality of Innovations

Finally, the principal who perceives educational innovations as being relatively beneficial has these characterisitcs: a higher non-government income, a more open mind; and less perceived psychological distance between himself and his school faculty. The principal who sees library reading assignments as beneficial reports more frequent discussions with faculty concerning library reading assignments.

Conclusions

Table 5-5 reports those independent variables which are significantly correlated with at least two or more dependent variables in the principal data. These correlations give some clue as to the important variables associated with the principal's behavior concerning the diffusion and adoption of new educational practices. As Table 5-5 indicates, the independent variables significantly correlated with at least two dependent variables are age, government income, total income, number of foreign countries visited, self-rated administrative ability, number of other principals communicated with, and frequency

Table 5-5

Independent Variables Significantly Correlated with Two or More of the Dependent Variables

Independent Variables	Dependent Variables			
	Time of Awareness	Time of School Adoption	Perceived Time of Teacher Adoption	Perceived Beneficiality of Innovation
Age		+	+	
Government income	+	+	+	
Total income	+	+	+	
Number of foreign countries visited		+	+	
Self-rated administrative ability		+	+	
Number of other principals communicated with		+	+	
Frequency of meetings with persons from Thai colleges and universities		+	+	

of meetings with persons from Thai colleges or universities. In each instance the correlation is positive.

The principal of an innovative school, or of a school with innovative teachers, tends to be characterized by his range of communication activities. He travels, he attends meetings, he talks to his school faculty and to educators outside the school, and he uses the mass media. He is older and more experienced than other principals. Such a principal seems likely to have the knowledge and the respect which will allow him to institute innovations effectively in his school. Our data indicate, however, that the characteristics of this principal are somewhat different from those of the principal who is aware of innovations early or of the principal who perceives innovations as beneficial. Comparatively few principals possess both receptivity to innovations and the ability to institute them effectively.

Chapter VI

DIFFUSION OF INNOVATIONS AMONG CHANGWAD EDUCATION OFFICERS

In the Thai educational system, a changwad education officer appointed by the Under-Secretary of State for Education functions as supervisor of the government secondary schools in a changwad or province. He acts in a liaison position between the Ministry of Education and the schools. He usually does not make direct decisions on the adoption of educational innovations by the schools, but he has great potential influence over the decisions of school principals as their supervisor, inspector, and - sometimes - friend. Since the changwad education officer's functions include budgeting, supply, personnel, and finance for the schools in his province, he has the opportunity to act as a change agent by relaying information about innovations from the Ministry and otherwise helping in the promotion of educational innovations. If it were properly utilized, the C.E.O.'s intermediate position between the Ministry and schools could play a beneficial part in the diffusion of educational innovations. It thus seems important and practical to look at the changwad education officer's attitude toward new educational practices. From this analysis we hope to draw some understanding of the C.E.O.'s role in the adoption of educational innovations in secondary schools.

The data were collected during a national conference of changwad education officers in 1966. We were able to get self-administered group questionnaire responses from 60 C.E.O.'s during the conference. Later, we were able to collect responses by mail from six other C.E.O.'s, giving us data from 66 of Thailand's 71 changwad education officers. Our analysis is based on 65 of these respondents; the C.E.O. from the Bangkok-Thonburi area was eliminated from the analysis since secondary school principals in that area deal with the Ministry directly instead of through him.

Description of Changwad Education Officers

Independent Variables

All of the C.E.O.'s are men. The average age of the changwad education officers is 49. All were between 30 and 59 years of age. Table 6-1 gives the distribution of ages.

Table 6-1

Age Distribution of Changwad Education Officers

Age	Frequency	Percentage
30-34	1	1.5
35-39	8	12.3
40-44	5	7.7
45-49	16	24.6
50-54	21	32.3
55-59	13	20.0
No response	1	1.5
TOTAL	65	100.0

The formal education levels achieved by the changwad education officers are given in Table 6-2. 14.4 percent of the C.E.O.'s have only a high school

Table 6-2

Education of Changwad Education Officers

Highest Educational Level Attained	Frequency	Percentage
High school certificate (Maw Saw 5)	10	15.4
Secondary school teachers certificate (2 years of college)	31	47.7
Secondary school teachers certificate, plus additional courses	0	0.0
College diploma (Bachelor's degree)	14	21.5
College degree (Master's degree)	3	4.6
Doctor's degree	1	1.5
No response	6	9.2
TOTAL	65	100.0

education, compared with 2.6 percent of the principals and 2.7 percent of the teachers in the sample. 63.1 percent of the C.E.O.'s have not received bachelor's degrees, compared with 57.9 percent of the principals and 68.7 percent of the teachers in the sample. Four of the respondents reported studying in universities outside of Thailand, all in the United States. Thirty-seven C.E.O.'s (56.9 percent) had traveled outside Thailand.

Forty-eight (73.8 percent) of the changwad education officers have taught in government secondary schools. More than half of these have taught for at least six years. Ten of the C.E.O.'s (15.4 percent) have been principals of government secondary schools.

The question "For how many years have you been a changwad education officer?" produced the responses in Table 6-3.

Table 6-3

Length of Experience of Changwad Education Officers

Years of Experience as a C.E.O.	Frequency	Percentage
Less than 2 years	8	12.3
2-5 years	19	29.2
6-8 years	16	24.6
9-11 years	8	12.3
12-14 years	3	4.6
15-17 years	2	3.1
18-20 years	4	6.2
More than 20 years	5	7.7
TOTAL	65	100.0

Though most respondents had been changwad education officers for six years or longer, only eight had been assigned in their present changwad as long as six years.

When asked how many of their five best friends were also C.E.O.'s, the C.E.O.'s showed a tendency to be oriented to each other as friends, as shown in Table 6-4. Each respondent was asked to rank several categories of people in order of the importance he attached to their opinion of his ability in doing his job. The Under-Secretary of State for Education, the changwad governors and the Ministry of Education were ranked as most important. The Minister of Interior, other C.E.O.'s, and students were ranked as least important. It is interesting that, despite the strong orientation of C.E.O.'s to each other as best friends, only two respondents indicated that they were most concerned with the opinions of their ability held by other C.E.O.'s.

Table 6-4

Friendship Among Changwad Education Officers

Number of Five Best Friends Who Are C.E.O.'s	Frequency	Percentage
None	7	10.8
One	3	4.6
Two	5	7.7
Three	13	20.0
Four	6	9.2
Five	31	47.7
TOTAL	65	100.0

Like the sample teachers and principals, the C.E.O.'s reported frequent exposure to the mass media. Almost all of the respondents reported reading newspapers, "general interest" magazines, and books, and listening to the radio or watching television several times a week. Most C.E.O.'s reported that they had read from two to six different educational journals during the previous month. Those most often mentioned were Mitr Kru, Wittayasarn and Wittayacharn.

Fifty of the changwad education officers indicated that they had been visited in their offices during the previous year by officials of the Department of Secondary Education. The most frequent topic discussed at these visits was school finance. Respondents were also asked how often during the previous year they had visited the offices of other C.E.O.'s to discuss educational problems. Forty-five of them (69.2 percent) reported having made such visits. The educational problems most frequently discussed involved pupil discipline, school finance, school libraries, guidance and counseling, and Peace Corps teachers.

C.E.O.'s were asked, "During the past 12 months have you held any formal meetings with your government secondary school principals to discuss educational problems with them?" Their responses are given in Table 6-5.

Table 6-5

Meetings of Changwad Education Officers with School Principals

Number of Meetings Reported	Frequency	Percentage
None	3	4.5
1 or 2 times	12	18.5
3 or 4 times	10	15.4
5 or 6 times	4	6.2
7 or 8 times	1	1.5
9 or 10 times	7	10.8
More than 10 times	26	40.0
No response	2	3.1
TOTAL	65	100.0

Topics Discussed During Meetings of C.E.O.'s with School Principals	C.E.O.'s Discussing the Problem	
	Frequency	Percentage
Pupil discipline problems	54	83.1
School finance problems	50	76.9
School library problems	42	64.6
Guidance and counseling problems	42	64.6
Peace Corps teacher problems	31	47.7
Handicraft education problems	20	30.8
Parent-teacher association problems	18	27.7
Audio-visual material problems	10	15.4

Dependent Variables

Most of the C.E.O. respondents reported that they were aware of Thai use of all ten of the innovations studied. Eight of the innovations were known to at least 90 percent of the respondents. The two innovations which were least familiar were the use of slide projectors as a teaching device (known to 75.4 percent) and the use of class discussion as a teaching technique (known to 80 percent).

Information about the sources from which changwad education officers become aware of innovations may help us understand their role in the diffusion of educational innovations in Thailand. Table 6-6 shows the sources of first awareness of library reading assignments and coeducation reported by C.E.O. respondents.

Table 6-6

First Sources of Awareness for Changwad Education Officers

Source (Channel) of Awareness of the Innovation	Library Reading Assignments		Coeducation	
	Frequency	Percentage	Frequency	Percentage
From one of my college instructors	7	10.8	3	4.6
From a teacher in a government secondary school	30	46.2	10	15.4
From a principal of a government secondary school	7	10.8	5	7.7
From a Ministry of Education publication	13	20.0	16	24.6
From a Ministry of Education directive	0	0.0	20	30.8
From a school supervisor (inspector)	3	4.6	1	1.5
At a conference	3	4.6	4	6.2
From an amphur education officer	0	0.0	1	1.5
From a changwad education officer	0	0.0	4	6.2
From a college textbook	2	3.1	1	1.5
While studying abroad	0	0.0	0	0.0
No response	0	0.0	0	0.0
TOTAL	65	100.0	65	100.0

The major sources of first awareness are - as they were for the sample teachers and principals - college instructors, teachers, principals, and Ministry publications. The C.E.O.'s report having learned of innovations from teachers and principals much more often than the principals and teachers report having learned from the C.E.O.'s. This suggests that, in the rapidly growing Thai educational system, new ideas may enter the system at the bottom, with the beginning teacher who has learned the latest techniques, and that awareness sometimes diffuses from the new teachers to other teachers, to principals, and to changwad education officers instead of coming down through the formal hierarchical channels.

Changwad education officers were also asked to report the years in which secondary schools under their direction first used the ten innovations. At the time of the study eight of the ten innovations were used by majorities of the C.E.O.'s. Table 6-7 shows the percentage of C.E.O.'s reporting adoption of the innovations by schools under their direction.

Table 6-7

Adoption of Innovations Reported by Changwad Education Officers

Innovations	C.E.O.'s Reporting Use in Changwad	
	Frequency	Percentage
Class discussion method	44	67.7
Objective tests	63	96.9
Available library books	64	98.5
Available slide projectors	26	40.0
Coeducation	61	93.8
Peace Corps volunteer teachers	63	96.9
Organization into departments	63	96.9
Guidance counseling	51	78.5
Teaching of handicrafts	60	92.3
Parent-teacher associations	23	35.4

Figures 6-1 and 6-2 show the responses of the changwad education officers to questions dealing with two innovations, library reading assignments and coeducation. Cumulative percentage curves show the increase in the awareness and adoption of the innovations over a ten year period. The awareness curve of library book assignments and the adoption curve for library books are steeper than the awareness and adoption curves for coeducation. This indicates that library books diffused faster than coeducation.

Awareness time for reading assignments was measured by the question, "About how many years ago did you first hear that some teachers in Thai government secondary schools were requiring their students to read from library books?" 9.2 percent of the respondents had first heard of this innovation more than ten years previously. Five percent were still not aware of the Thai use of the innovation at the time of the study. Adoption time (or innovativeness) was measured by the question "About how many years ago did a government secondary school under your direction first acquire library books?" Thus, it is not the changwad education officer's adoption behavior that was measured, but rather his perception of the behavior of the principals and teachers in his changwad. It should also be noted in interpreting Figure 6-1 that the awareness question and the adoption question ask about two somewhat different innovations. The former asks about the use of library books; the latter asks about the availability of library books. 86.2 percent of the C.E.O.'s reported that schools in their changwads had had library books for three years, though only 75.4 percent reported that they had been aware for that long of teachers giving assignments in the library books.

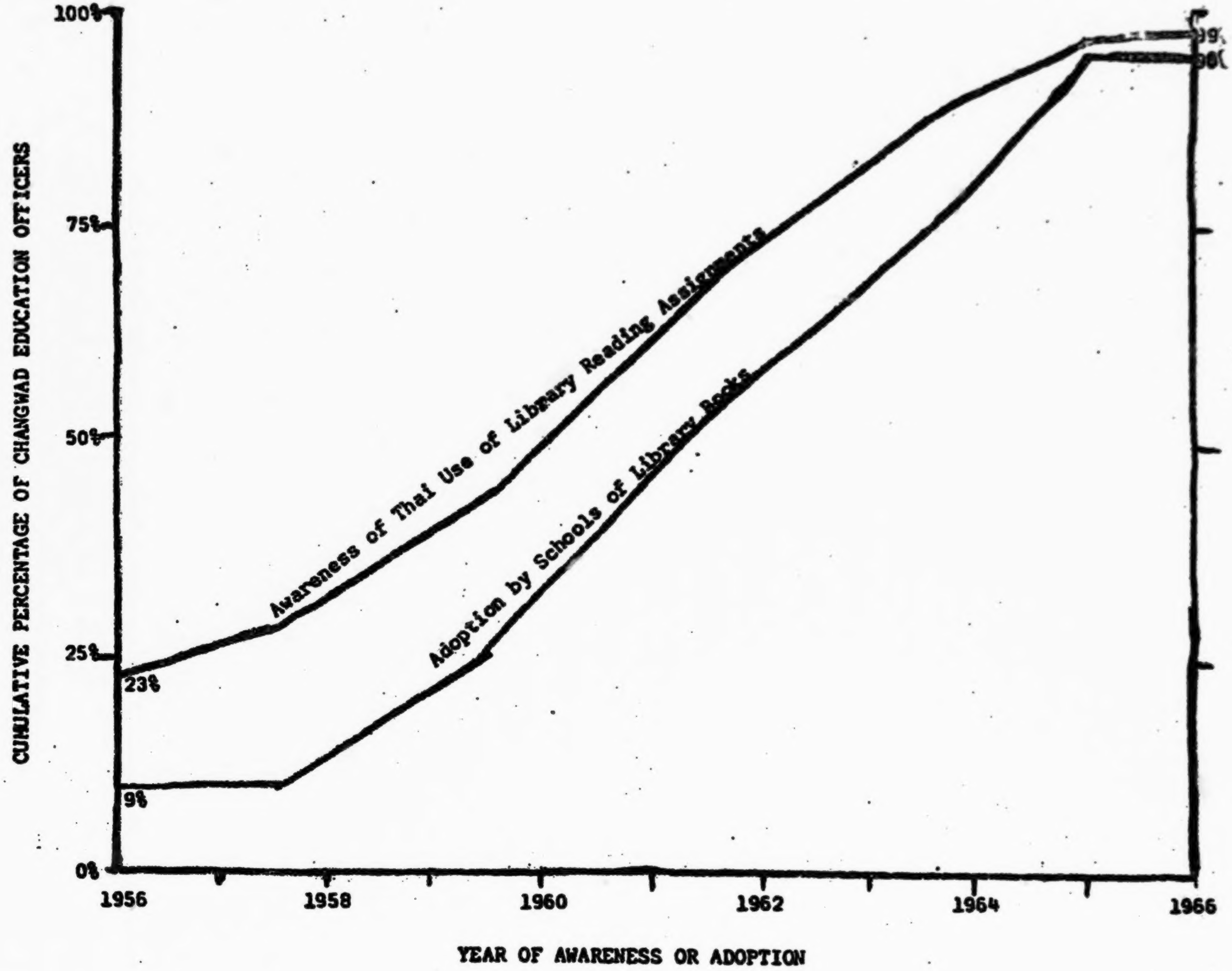

Figure 6-1. Awareness of Library Reading Assignments and of Changwad Adoption of Library Books as Reported by Changwad Education Officers

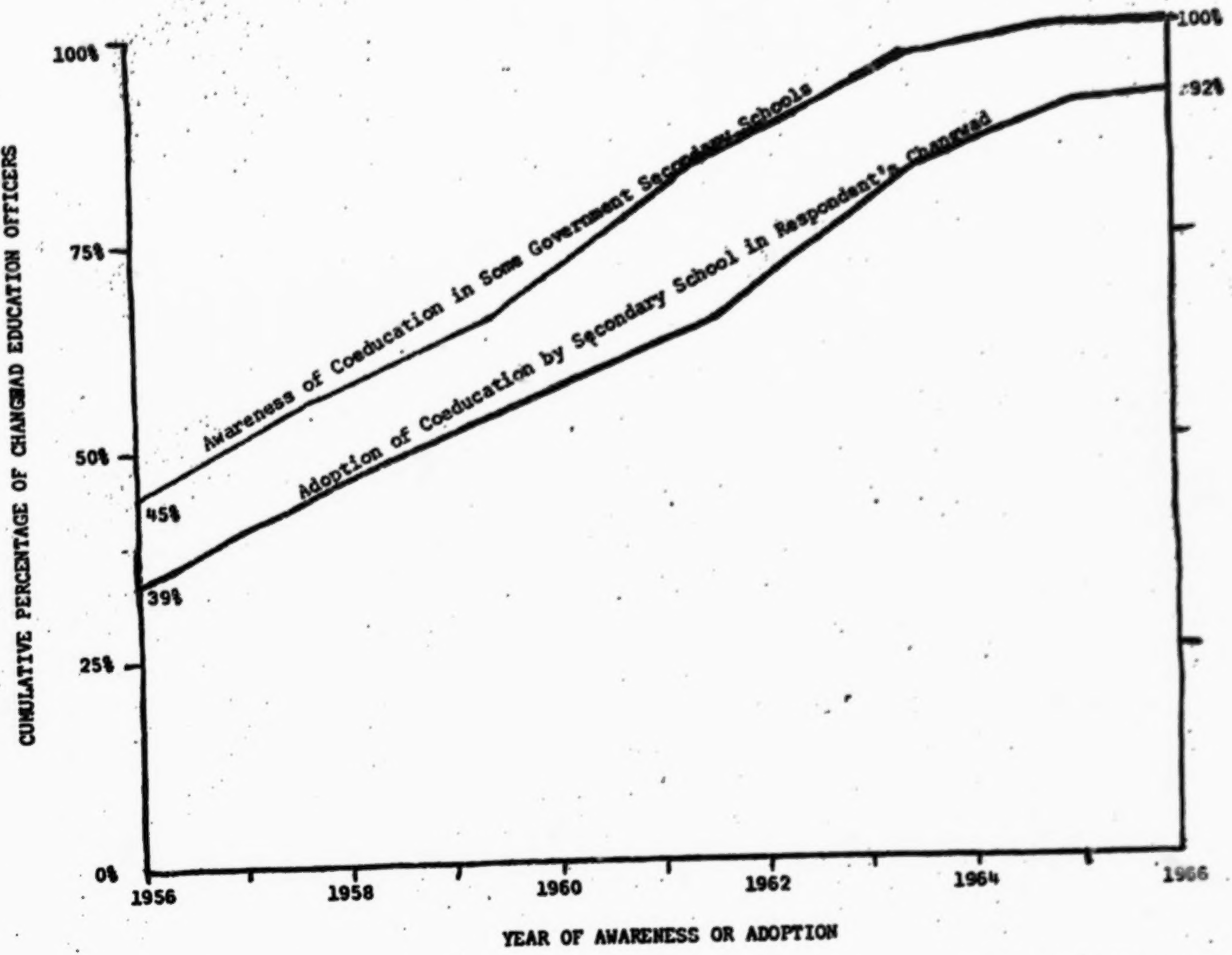

Figure 6-2. Awareness and Adoption of Coeducation Reported by Changwad Education Officers

Figure 6-2 shows the responses of the C.E.O.'s in regard to coeducation in government secondary schools. 86.2 percent said they had heard about the Thai use of the innovation at least five years before the study, and all of them had heard of it at least one year before the study. On the other hand, three years before the study only 83.1 percent of the respondents' changwads included coeducational schools, and at the time of the study five of the respondents did not have coeducational secondary schools in their changwads.

The number of changwad education officers who rated each of the five innovations studied as "very beneficial" is given in Table 6-8. Again we see, as we did with the principal and teacher responses, a generally favorable perception of the innovations studied.

Table 6-8

Beneficiality Ratings of Innovations by Changwad Education Officers

Innovation	C.E.O.'s Rating Innovation "Very Beneficial"	
	Frequency	Percentage
Class discussion method	31	47.7
Objective testing	21	32.3
Library book assignments	59	90.8
Use of slide projectors	48	73.8
Coeducation	32	49.2
Peace Corps volunteer teachers	25	38.5
Organization into departments	47	72.3
Guidance counseling	47	72.3
Teaching of handicrafts	39	60.0
Parent-teacher associations	40	61.5

Correlates of Awareness, Perceived School Adoption, and Perceived Beneficiality of Innovations

Table 6-9 gives the zero-order Pearson product-moment correlation coefficients obtained between three dependent variables and selected independent variables for the data from changwad education officers. The dependent variables in the table are: (1) mean time of awareness of Thai use of the ten innovations, (2) mean time of adoption of seven innovations by schools under the C.E.O.'s direction, and (3) the respondent's ratings of the beneficiality of the ten innovations. The independent variables were categorized as: (1) demographic and socioeconomic variables, (2) knowledge and experience, (3) attitudes and beliefs, (4) institutional relationships, and (5) perceptions of innovations.

Awareness time and adoption time (i.e. reported awareness of Thai use and reported awareness of changwad use) were correlated .66. Neither of these variables was closely related to the beneficiality index (the correlations of awareness and adoption with beneficiality were .04 and .05 respectively).

The coefficients of correlation reported in Table 6-9 are indices of the relationships between the given dependent and independent variables for our sample of 65 changwad education officers. Since we have data from almost all of the changwad education officers in Thailand, all of the correlations are parameters (population values). In this situation, significance levels have no utility since we do not need to use sample values to infer population values. We have concentrated our attention on correlations of at least .224; that is, on correlations where at least five percent of the variance in the dependent variable can be predicted from the variance of the independent variable.

From the correlations presented in Table 6-9 we are able to draw rough profiles of changwad education officers who are early in awareness of innovations, who supervise innovative schools, and who see educational innovations as especially beneficial.

Table 6-9

Pearson Zero-Order Correlations Between Independent and Dependent Variables for Changwad Education Officers (N = 65)

Independent Variables	Dependent Variables		
	Time of Awareness[a]	Perceived time of School Adoption[b]	Perceived Beneficiality of Innovations[c]
I. DEMOGRAPHIC AND SOCIOECONOMIC			
A. Parents			
1. Father's education	.094	.042	.059
2. Mother's education	.075	.084	.033
3. Increase of own education over parent's education level	.127	.124	-.143
B. Age	-.157	-.079	.335[d]
C. Income			
1. Government income	.101	.348	-.067
2. Non-government income	.041	.092	.184
3. Total income	.112	.341	.025
D. Residence			
1. Duration of urban residence	-.048	.082	-.156
2. Proportion of life in urban area	-.122	.094	-.150
II. KNOWLEDGE AND EXPERIENCE			
A. Education			
1. Education	.373	.329	-.191
2. Number of science courses taken	.270	.133	.044
B. Number of foreign countries visited	.375	.243	-.112
C. Employment			
1. Length of experience as a government secondary school teacher	.139	.193	.230

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[a] Mean time since awareness of Thai use for the ten innovations studied.

[b] Mean time, for eight non-individual-choice innovations, since awareness of use at a secondary school under the C.E.O.'s direction.

[c] Mean beneficiality rating for the ten innovations studied.

[d] Coefficients of correlation are underlined when at least five percent of the variance in the dependent variable can be predicted from the independent variable.

Table 6-9 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Perceived Time of School Adoption	Perceived Beneficiality of Innovations
2. Length of experience as a government secondary school principal	-.038	.070	.184
3. Length of experience as a changwad education officer	.051	.237	.097
4. Length of experience in present position	.085	.086	.046
5. Total length of government secondary school employment	.096	.255	.250
D. Mass Communication Exposure			
1. General mass media exposure	.004	.020	-.024
2. Number of professional journals read	-.087	-.122	.148
E. Knowledge			
1. Knowledge of other countries	.121	.125	-.113
2. Knowledge of diffusion strategies	.035	.159	.103
III. ATTITUDES AND BELIEFS			
A. Openmindedness	.314	.132	-.201
B. Need for autonomy	-.075	-.057	-.001
C. Change orientation	.310	.206	-.116
D. Self-rated administrative ability	-.025	-.000	-.200
IV. INSTITUTIONAL RELATIONSHIPS			
A. Relations with Superiors			
1. Perceived psychological distance between self and Under-Secretary of State for Education	.041	-.157	-.208
2. Perceived degree of own participation in decision-making with Under-Secretary of State for Education	-.001	.030	-.028
3. Perceived favorable attitude of the Under-Secretary of State for Education toward the adoption of new educational practices	-.280	.017	.217

Table 6-9 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Perceived Time of School Adoption	Perceived Beneficiality of Innovations
4. Perceived change orientation of Under-Secretary of State for Education	-.102	.013	.009
5. Reported frequency of performance feedback from Under-Secretary of State for Education to self	-.022	.155	.133
6. Reported frequency of visits from Department of Secondary Education personnel	-.107	-.087	-.037
7. Time since awareness of Ministry of Education support for establishment of school libraries[e]	.245	.506	-.096
8. Perceived favorable attitude of Ministry of Education officials toward the use of library reading assignments[e]	.009	.185	-.048
9. Belief that the attitudes of Ministry of Education officials should influence the decision to adopt library reading assignments[e]	-.099	.183	-.030
10. Reported frequency of discussion of coeducation with Ministry of Education officials[f]	.091	.042	.132
11. Perceived favorable attitudes of Ministry of Education officials toward converting all government secondary schools to coeducation[f]	-.230	-.136	.316

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[e] The dependent variables correlated with this variable were for columns 1 to 3 respectively: (1) time since first awareness of Thai government secondary school teachers making reading assignments in library books, (2) time since a school under the respondent's direction first obtained library books, (3) perceived beneficiality of library reading assignments.

[f] The dependent variables correlated with this variable were, for columns 1 to 3 respectively: (1) time since first awareness of coeducation in Thai government secondary schools, (2) time since first coeducational government secondary school was established in respondent's changwad, (3) perceived beneficiality of coeducation.

Table 6-9 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Perceived Time of School Adoption	Perceived Beneficiality of Innovations
12. Belief that attitudes of Ministry of Education officials should influence the decision to convert all government secondary schools to coeducation[f]	-.167	-.165	.321
B. Relations with Peers			
1. Proportion of close friends who are also changwad education officers	-.139	.065	.032
2. Perceived favorable attitudes of other C.E.O.'s toward adoption of new educational practices	-.152	.076	.238
3. Reported frequency of formal meetings with other C.E.O.'s	-.075	-.071	-.088
4. Reported frequency of visits to other C.E.O.'s to discuss educational problems	-.232	-.153	.134
5. Reported number of other changwad education officers visited with	-.107	-.021	-.078
6. Perceived favorable attitude of other C.E.O.'s toward the use of library reading assignments[e]	.034	-.005	-.119
7. Perceived favorable attitude of other C.E.O.'s toward coeducation[f]	-.147	-.001	.330
C. Relations with Subordinates			
1. Perceived psychological distance maintained between self and school principals	.044	-.098	-.177
2. Perceived legitimacy of participation by teachers and school principals in school decision-making	.084	.042	.239
3. Perceived favorable attitudes of principals toward adoption of new educational practices	-.047	.226	.314

Table 6-9 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Perceived Time of School Adoption	Perceived Beneficiality of Innovations
4. Perceived favorable attitudes of school teachers toward adoption of new educational practices	-.097	.053	.554
5. Reported frequency of performance feedback from self to school principals	.003	.063	-.061
6. Reported frequency of formal meetings with school principals to discuss educational problems	-.067	.035	-.242
7. Reported frequency of visits to all schools in changwad	-.034	.083	.084
8. Reported frequency of visits from school principals	.138	-.060	.000
9. Self-designated opinion leadership about new educational practices	-.041	.092	-.040
10. Perceived favorable attitudes of school principals toward library reading assignments[e]	.277	.141	.116
11. Perceived favorable attitudes of teachers toward library reading assignments[e]	.014	.015	.187
12. Perceived favorable attitudes of students toward library reading assignments[e]	-.157	-.002	.068
13. Belief that attitudes of principals should influence the decision to adopt library reading assignments[e]	.217	.294	.106
14. Belief that attitudes of teachers should influence the decision to adopt library reading assignments[e]	.195	.296	-.057
15. Reported frequency of discussion of library reading assignments with school principals[e]	.068	-.031	-.063
16. Reported frequency of discussion of library reading assignments with school teachers[e]	.156	.067	-.038

Table 6-9 (continued)

Independent Variables	Dependent Variables		
	Time of Awareness	Perceived Time of School Adoption	Perceived Beneficiality of Innovations
17. Perceived favorable attitudes of principals toward adoption of coeducation[f]	-.170	-.186	.368
18. Perceived favorable attitudes of teachers toward adoption of coeducation[f]	-.186	-.169	.411
19. Perceived favorable attitudes of students toward the adoption of coeducation[f]	-.131	-.195	.028
20. Reported frequency of discussion of coeducation with school principals[f]	.046	-.091	.051
V. PERCEPTIONS OF INNOVATIONS			
A. Perceived relative advantage to students of library reading assignments[e]	-.033	.133	-.003
B. Perceived relative advantage to students of coeducation[f]	-.250	-.291	.198

Early Awareness

The C.E.O. who becomes aware of the use of educational innovations in Thailand early tends to have more education, to have had more science courses in school, and to have traveled more in foreign countries than his peers. He tends to be more openminded and more change-oriented than his peers. He tends to visit other C.E.O.'s to discuss educational innovations less frequently than do C.E.O.'s who are later in awareness. The changwad education officer who is aware early is likely to perceive the Under-Secretary of State for Education as having a relatively negative attitude toward new educational practices. The changwad education officer who is aware of coeducation early tends to perceive the innovation as less advantageous to students than does a C.E.O. who becomes aware later, and he perceives the attitudes of Ministry of Education officials toward coeducation as relatively negative. The C.E.O. who becomes aware of the use of library reading assignments early also becomes aware of Ministry of Education support for that innovation early. He tends to perceive school principals as having favorable attitudes toward library reading assignments.

Early School Adoption

The changwad education officer whose schools adopt the innovations relatively early tends to be better educated than a C.E.O. supervising less innovative schools. He is more likely than other C.E.O.'s to have traveled outside of Thailand. He tends to have had more experience as a changwad education officer and a longer total period of employment with the government secondary school system than his peers, and he is likely to have a relatively high government income. He views school principals as possessing comparatively favorable attitudes toward new educational practices. The C.E.O. whose schools adopt library books relatively early perceives a greater need to consider principals' and teachers' attitudes in making the decision to adopt that innovation. He is likely to have been among the earliest to become aware of the Ministry of Education's support for school libraries. The C.E.O. whose schools adopt coeducation relatively early tends to perceive fewer advantages of coeducation for the students.

Perceived Beneficiality

The changwad education officer who perceives educational innovations as relatively more beneficial than do his fellow officers is older, has taught in government secondary schools longer, and has had a longer total length of employment with the government secondary school system than his peers. Compared with other C.E.O.'s, he has fewer formal meetings with his school principals. He perceives the attitudes of other changwad education officers, school principals, and school teachers as relatively favorable to new educational practices, and he tends to recognize the legitimacy of participation by teachers and principals in educational decision-making. The C.E.O. who considers coeducation relatively beneficial is likely to perceive a need to consider Ministry of Education officials' attitudes in making the decision to adopt coeducation. He tends to perceive Ministry of Education officials, other C.E.O.'s, principals, and teachers as having relatively favorable attitudes toward coeducation.

Conclusions

At this stage it might be useful to look at the different independent variables that are relatively highly correlated with at least two of the general dependent variables. This should give us some indication of which variables are most associated with the C.E.O.'s behavior concerning the diffusion and adoption of new educational practices. There are, however, only four such variables. Education and foreign travel are predictors of both early awareness and early adoption. Length of employment in government secondary schools and perceived favorable attitudes of principals toward new educational practices are predictors of early adoption and perceived beneficiality.

In all but a few cases time of awareness and adoption are correlated with independent variables in the same direction. Perceived beneficiality is often correlated with the independent variables in the opposite direction. For instance, more formal education is associated with an early time of awareness and adoption, but with a view of the innovations as less beneficial. This result could be due to the acquiring of a more critical view by the more educated, or it could be due to a greater agreement bias among the less educated.

In conclusion, the data from changwad education officers show that demographic, attitudinal, and institutional relational variables are more useful than communication variables in predicting the three dependent variables. This suggests that the C.E.O.'s did not really participate in decision-making with teachers and principals. The reported frequency of formal meetings with the school principals by the C.E.O.'s was correlated with perceived beneficiality -.24, but was correlated with time of awareness only -.07 and with adoption only .03. This suggests that the more communication the C.E.O.'s had with the principals, the more disadvantages they saw in the innovations, but that this communication did not influence the school principals' behavior in adoption. The C.E.O.'s communication with the teachers was correlated with time of awareness .15, with adoption .07 and with perceived beneficiality -.04. Again, communication was not associated with adoption.

For other reasons, also, we are led to conclude that the C.E.O.'s play only a minor role in the diffusion of educational innovations. The initial assumption that the innovativeness of C.E.O.'s would influence and be reflected in the adoption times for the schools in their changwads was not supported by the data. The C.E.O.'s tasks were observed to be mainly administrative in nature. Thus what we hoped would be a measure of the C.E.O.'s innovativeness can be treated only as a measure of their awareness of the adoption of educational innovations by the schools in their changwads. Although there are some relatively high correlations between "adoption time" and other independent variables, we don't know whether the relationships observed between dependent and independent variables are in any way causal. It seems likely that the more change-oriented C.E.O.'s were simply appointed to the more progressive areas. Thus what we have found are a number of characteristics of C.E.O.'s who are aware of innovations early and who have a relatively favorable attitude toward innovations. It is hoped that knowledge of these characteristics will help in the consideration of possible roles the C.E.O.'s may play in future change in Thai secondary education.

Chapter-VII

DISCUSSIONS AND IMPLICATIONS

Major changes in society have far-reaching implications for educational systems designed to serve a nation. For example, industrialization, automation, and resultant job displacement, along with concomitant requirements for increasing numbers of scientists, engineers, and highly-skilled technicians, place increased and changing demands on schools. This change phenomenon is especially true in developing nations. Regional pockets of poverty and unemployed persons who are largely the poorly or inappropriately educated, emphasize the need for reforms in the educational curriculum. The diffusion of desired educational change is of critical importance in current educational planning, which seeks to adjust Thailand's school system to the future occupational needs of the nation.

In previous chapters of this monograph, the research problems inherent in educational diffusion were described, the organization and administration of government secondary education in Thailand were discussed, and the methodology of our Project and the results of our data-analysis were reported. In this final chapter we will examine the insights obtained with the intent of recasting them in terms of (1) implications for educational change in Thailand and (2) implications for future inquiry. No attempt will be made to summarize major findings again, as each of the three findings chapters ends with a summary, and an overall review of the entire study is provided at the beginning of the present report.

Recommendations for Educational Change

Until the findings resulting from a research project have been utilized, the cost of the inquiry is an unrealized public investment. The following recommendations for educational change in Thailand are offered in hopes that they will contribute to more adequate utilization of our research results.

1. *Greater attention should be given to how educational innovations are utilized to secure desired outcomes, rather than just to achieving their rapid diffusion*. It is our general impression from the present study that although awareness* and use of the ten innovations that we studied diffused fairly rapidly, most of these practices are not employed very effectively in government secondary schools. Unfortunately, we did not gather much data on the *qualitative* aspects of innovation adoption in the present study. However, both personal observations and discussions with Ministry supervisors suggest that only a relatively small percentage of Thai secondary school principals and classroom teachers possess sufficient understanding of these innovations to permit effective in-school utilization.

It became evident during the conduct of the present study that, while those who govern Thailand and administer its educational system may subscribe in general terms to the modernization of Thai education, such goals as national unity, eradication of illiteracy, and reduction of ethnic differences (through expansion of contemporary educational practices) are much more important to them. Limited financial resources currently available to the educational establishment are now being expended almost entirely on construction of schools, expansion of teacher-training institutions, and training of personnel to staff expanding Ministry offices, teacher-training institutions, and schools. Few funds and little effort are now available to devote to *improving existing educational methodology*. Most such funds now being spent for educational modernization are provided by foreign governments and international agencies. Qualitative

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*We only measured the extent of awareness of the innovations' *existence*, and not the degree to which our respondents possessed *adequate knowledge* to use the innovations properly.

improvement of contemporary educational practice apparently is viewed as deserving only minimal attention and marginal resources.

Evidence of this relatively low concern for educational modernization by top-level Ministry officials is to be found on every hand. Schools being built today, for example, reflect little evidence of intensive effort toward design improvement, as they are identical in every important respect to schools built 20 or 30 years ago. The materials used, the physical layout of rooms, corridors, and offices, and the furnishings themselves are merely the more recent replicas of those found in older school buildings.

The Ministry of Education has not formally recognized the necessity of either library books or audio-visual materials, such as maps and charts, in the contemporary educational process. Funds to purchase such materials must be generated by the schools themselves; no provision is made in Ministry of Education appropriations for this purpose. Released time is not officially provided in most schools for either school librarians or guidance counselors; those teachers who volunteer or are appointed to perform these services must do so while carrying full-time teaching schedules - with a predictable lack of adequate performance. Mimeograph machines and stencils necessary for the reproduction of objective tests or other teaching aids must be provided by the local school, as must tools and materials needed in vocational education classes.*

Western observers are surprised by the extent to which formalism permeates the classroom and school environment. A high degree of rigidity characterizes the behavior of both pupils and teachers. Discussions, in the fullest sense of that term, are almost never encountered in Thai classrooms. Individual recitation appears to be much less common than choral response by class members as a group. Both the curriculum itself, and the manner in which classroom activity is conducted, foster and inculcate submissiveness on the part of the student.

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*An exception to this latter generalization are those pilot schools participating in the UNICEF vocational education project.

Guidance counseling in Thai secondary schools has mostly come to signify, for both teachers and students, provision of "moral guidance" to the students. Vocational guidance as such is notable by its absence; school counselors have not been provided with either the general data or the specific employment information essential for this type of guidance. Academic counseling has been described by school guidance personnel and principals as largely a function of individual teachers. Only problems involving discipline and personal adjustment are referred to school guidance counselors and these, it has been reported, are generally dealt with in terms of the behavior expected from a good Buddhist, a good son, a good citizen, or a good student. Except in UNICEF project schools, cumulative records are not maintained on individual students, and standardized personality or aptitude tests are unknown.

2. Changwad and regional education officers should play a more important role in the diffusion of educational innovations. While many exceptions can be cited, changwad and regional education officers appear, on the whole, to command less respect from school principals and teachers than other educational officials. These officers must necessarily play an important role in any modernization effort inaugurated by the Ministry, and so their position vis-a-vis both those higher and lower in the hierarchy becomes extremely important.

As seen by teachers and principals, most changwad education officers are ill-fitted to perform the needed functions in improvement of contemporary Thai secondary education. They are perceived as concerned largely with the logistic minutiae of financial administration and record-keeping. Secondary school principals point out that few changwad education officers possess familiarity with the problems confronting secondary education, most having come to their administrative posts through the elementary school system. Both school principals and teachers say that changwad education officers are generally no better educated than those whose efforts they are called upon to supervise. About half of the 65 changwad education officers in our sample said that they are generally not seen by government secondary school principals and teachers as good sources of information about new educational practices. Three-fourths of these respondents felt that even other changwad education officers probably do not consider them good sources of information about new educational practices. So changwad education officers are not perceived by their school staffs as concerned with qualitative improvement of contemporary education. Those occupying administrative posts in the Ministry also do not appear to perceive the changwad education officer as playing a crucial role in educational improvement.

Perhaps the most compelling evidence of the relatively insignificant role played by changwad education officers is found in the data reported by our teacher respondents on their channels of communication about educational innovations.* Figure 7-1 shows a paradigm of the general nature of innovation flows in the Thai secondary educational system. This diagram is necessarily somewhat of an over-simplification of the data we obtained on communication channels, in that only the most frequently reported flows are depicted.

Before conducting our data-gathering we had mainly assumed there would be a downward flow of new ideas from top executives in the Ministry, through

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*Details on the relative importance of various channels for teachers, principals, and C.E.O.'s may be found in Tables 4-12, 5-1, and 6-6, respectively.

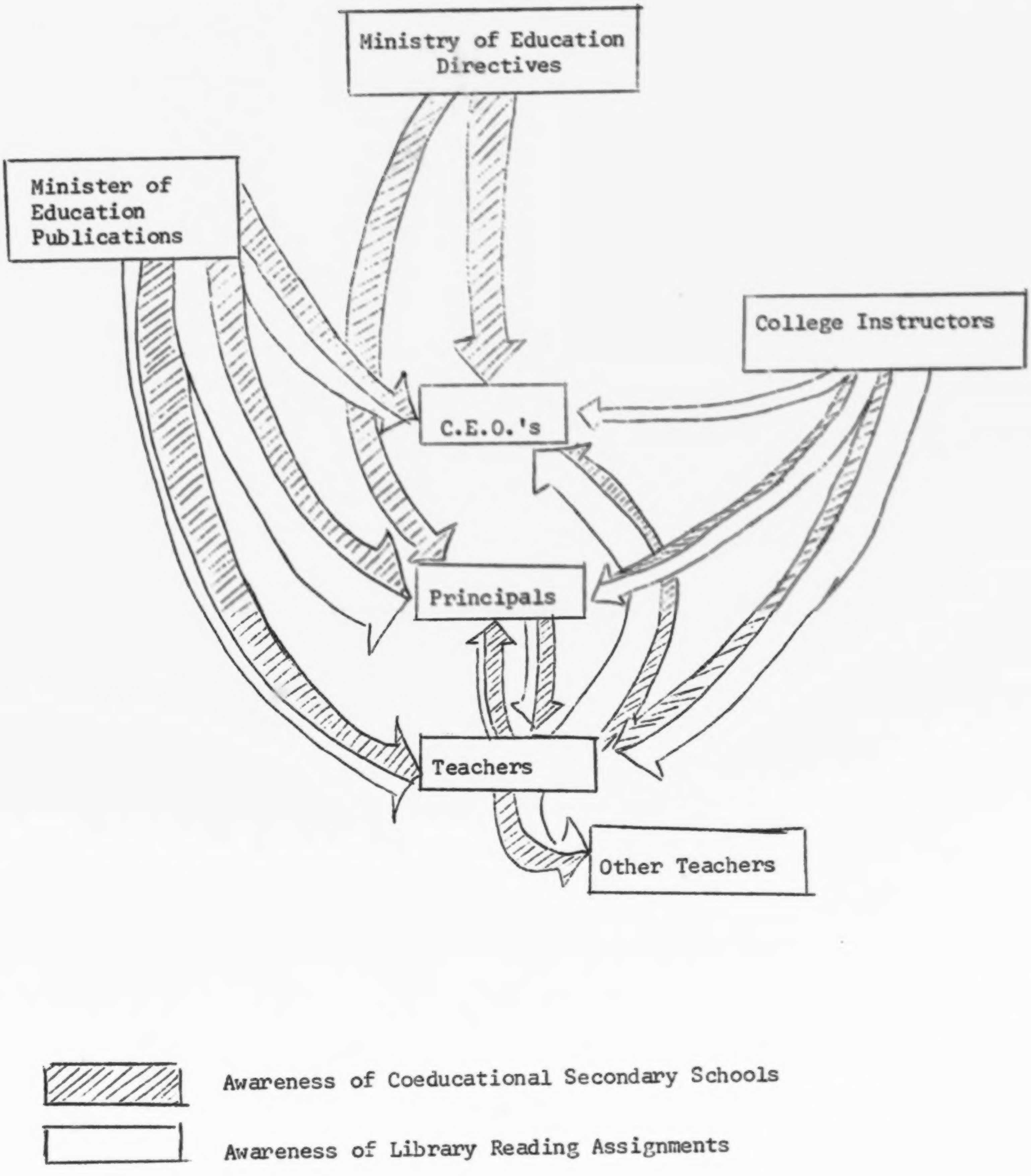
Ministry of Education Directives
Minister of Education Publications
College Instructors
C.E.O.'s
Principals
Teachers
Other Teachers
▨ Awareness of Coeducational Secondary Schools
☐ Awareness of Library Reading Assignments

Figure 7-1. Paradigm of Flow of Awareness of Two Innovations--Coeducational Secondary Schools and Library Reading Assignments--to Sample Teachers

such subordinates as regional education officers and changwad education officers, to school principals and teachers. In reality, we found (Figure 7-1) that there is a considerable upward flow of innovations from teachers, especially those young teachers who have most recently been trained, to principals, and in turn to C.E.O.'s. How can we explain this seeming paradox?

The answer lies, in large part, in the nature of Thai teacher training. The ten educational innovations that we studied entered the Thai system from external sources, largely the United States, mostly via Ministry and teacher-training institute officials who were sent to the United States for graduate training. These innovation promoters who returned to the Ministry had little effect on diffusion of the innovations to school teachers because the changwad education officers, as we have just pointed out, constituted a communication gap between the Ministry officials and the teachers. Figure 7-1 shows that mass media messages, largely contained in educational journals and newsletters, did provide one means of diffusion for the foreign-trained Ministry officials to reach those lower in the hierarchy.

However, more important were the professors in the teacher-training institutes. They had much direct, personal contact with future teachers. Not only could they describe the innovations, but they could also in many cases actually demonstrate them. So the newly-trained school teachers entered the Thai secondary schools with a superior stock of innovations to that of the more experienced teachers, or the principals and C.E.O.'s. One problem for these novice but innovative teachers is that they are of relatively low status in their school system, and their technological advice to superiors is unlikely to receive much attention.

So there is both a short-term and a long-range process of educational change in Thailand. The first consists mainly of mass media, print messages about new educational ideas which flow more-or-less directly from cosmopolite Ministry officials to school teachers. This channel is able to inform the receivers about the existence of educational innovations, but it is unlikely to convince them to adopt.

The longer-term process of change consists of the gradual replacement of present teachers with novices who have received training about the educational innovations while attending a teacher training institute*. In spite of a fairly rapid rate of turnover of teachers in government secondary schools, years will be required for this latter method of change to completely modernize Thai education.

Almost completely unimportant as a diffusion channel are the regional and changwad education officers. They offer a potential route to the rapid modernization of Thai secondary education; but they need to be better trained in both the nature of the educational innovations and in how to secure the adoption of these new ideas. Most of all, the educational supervisors must be encouraged by the Ministry to function as change agents.

Perhaps it would be wise to allow the C.E.O.'s to continue to concentrate somewhat heavily on the administrative aspects of their positions, and to encourage the regional education officers to act as change agents. These regional education officers are fewer in number than the C.E.O.'s and generally have more schooling. Hence, they are an easier target for attempts to convert them to the role of educational change agents.

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*On the basis of his analysis of two liberal arts colleges in the United States, Davis (1965) concluded that a major reason for innovativeness, in the systems he studied, is staff recruitment policies. When the system sought to employ more innovative teachers, it soon developed innovative norms.

Regional education offices could become an effective and important link between Ministry offices in Bangkok and the changwad education offices. Regional education officers should be given responsibility for training teachers and principals in the use of new educational practices. Specialists in library operation, use of audio-visual equipment, guidance counseling, and other educational innovations should be attached to each regional education office. An inspection and evaluation unit should also be established within each regional education office to provide independent assessment of in-school innovative programs. Meetings, conferences, and other forms of in-service training programs directed to help teachers, principals, and C.E.O.'s in the use of innovations, should be much more intensively employed than at present.

Much greater use should be made of Thai university personnel in the planning and conduct of in-service teacher training programs. University faculty members could be employed during vacation periods by the Ministry or by regional education offices for this purpose.

3. Subject matter specialists are needed to develop, adapt and disseminate educational innovations to school teachers. There are presently a number of such specialists in library science, audio-visual methods, guidance, etc., in the Ministry, but their number needs to be much increased. The present specialists also seem to play a very passive role in educational diffusion in Thailand; they seldom travel out of Bangkok to regional or changwad offices or to local schools. Such specialists should be involved in searching widely for educational improvements, in adapting them to Thai conditions, and then in promoting them with regional and changwad education advisors, and in training sessions with school teachers and principals.

So we feel that an important lack in contemporary Thai education is a large number of specialists competent to develop aptitude tests suitable for use in the Thai environment: meaningful film strips, slides, moving pictures and other audio-visual displays; guidance counseling manuals; objective testing techniques; agricultural education texts; and other specialized educational methodologies.

4. Desired innovations need adaptation to achieve full compatability with Thai culture, values, and social setting. Western influence upon Thai government schools has been significant. However, planners of educational innovations need to be well aware that the Thai's have had a long history of "selective adaptation" of foreign ideas. Those elements of Western educational practice judged unsuited to the Thai cultural milieu simply do not find their way into the educational system.

As contrasted with the United States, innovation is not highly valued. The Thai is well aware of his historical traditions and finds therein much worthy of preservation. For example, traditional Thai emphasis on individualistic behavior mitigates against Western values of efficiency, productivity, regularity and discipline. Thai's tend to prefer unhurried and carefully considered change. To date, there has been only limited practice in systematic goal setting (in measurable terms) with rigorous periodic evaluation of goal attainment and goal failures.

The source of innovation sponsorship is of prime importance within the governmental system. Thai's tend to be more status conscious than their U.S. counterparts, thereby placing great importance on the innovations' sanctions and sponsorship by high governmental and educational officials. The concept of adaptation has numerous implications for the development of diffusion strategies by educational planners. For example, numerous "outside" innovation schemes have not been successfully diffused once the external fiscal support was terminated. The planning and diffusion of educational improvements in Thailand must carefully recognize the socio-economic-political setting of the host nation.

The immediate years ahead will witness an increasing rate of educational change throughout the world. Educational planners will need to consider each educational innovation in terms of one of four alternative responses: (1) ignore, (2) reject, (3) adopt, or (4) adapt. If an educational innovation is adopted or adapted, then a carefully conceived plan must be developed that is designed to successfully diffuse the desired educational change. The following partial listing summarizes the major educational innovations currently being diffused through United States educational systems.

In organization and staffing:

1. Reorganization into larger school systems
2. Educational parks
3. Schools-within-a-school
4. New forms of vocational-technical education
5. Flexible scheduling
6. Pre-school education centers
7. Professional and para-professional staffing.

In methods of instruction:

1. Large group instruction
2. Team teaching
3. Small group seminars
4. Guided independent study
5. Discovery or inquiry learning
6. Non-graded instruction
7. Programmed learning
8. Utilization of electronic teaching-learning aids

In curriculum content:

1. Modern mathematics
2. New physical and biological sciences
3. Correlated social sciences
4. Fused humanities

In technological changes:

1. Language laboratories
2. Instructional materials centers
3. Electronic learning aids
4. Computer-assisted instruction

This partial listing of current educational innovations illustrates the importance of the diffusion process in improving educational organizations. Thailand will be facing the important task of selecting or inventing educational changes designed to achieve national educational goals. Educational change will be of increasing importance during the decade ahead.

Recommendations for Future Research

The present study, as pointed out in Chapter I, is novel because it is the first study of educational diffusion attempted outside of the United States. As such, some of our methodological experiences may be useful to future diffusion researchers.

1. Cultural Biases in Variable Selection

The conceptual framework for the present investigation was heavily based on previous conceptualizations and research results from U.S. studies. This necessarily introduced a cultural bias in what we looked for, and in how we looked for it. The seriousness of the problem is perhaps indicated, in part, by the rather low correlations we found (Chapter IV) between many of our independent variables and our dependent variables of innovativeness, perceived beneficiality, and awareness of innovations. Higher relationships have generally been reported for many of these variables in U.S. studies. These differences in results are partly explained, we feel, by contrasts in Thai and U.S. cultural values, organizational behavior, etc.

And not only did we commit "sins of commission" in the design of our inquiry, but we also were involved in "sins of omission" by ignoring variables that are important influences upon Thai educational change, but which are relatively unimportant in the U.S. setting. An example is provided by one independent variable which we ignored, Civil Service rank. It was not until our data were gathered and most of our analysis completed that a colleague happened to inquire about the relationship between Civil Service rank and innovativeness. Perhaps our cultural blindness was due to the fact that there are not formal differences in rank among U.S. teachers, although of course there are distinctions in salary, respect, etc.

2. System Effects on Teachers' Behavior

Perhaps the most egregious shortcoming of the present study is that we did not originally design the inquiry to consider so-called "system effects" on teachers' behavior regarding innovation.. We did not explicitly recognize in our data-analysis procedures that teachers work in schools, and that the social structure of the school has great bearing on their innovative behavior.

An obvious reason for our scientific interest in social structure is that it has an important influence on individual behavior, including the adoption of new ideas. Yet, most past diffusion inquiry, including our study, seems to have implicitly assumed that such structural effects are not worth much attention. Our frequent low correlations, many of which are not significant, between the independent variables and (1) teachers' awareness of new educational innovations, (2) favorable attitudes toward these new ideas, and (3) innovativeness, may be due to the fact that structural effects were almost entirely ignored. The independent variables measured individual (teacher) characteristics and attitudes, but paid no attention to school effects on teacher behavior. In other words, the analysis treated the teachers as if they did not work in schools, and as if the school did not have a considerable effect on each teacher's diffusion behavior. Yet it is his fellow school teachers with whom the Thai teacher interacts most about innovations. Their characteristics and beliefs thus have great effect on his knowledge, attitude, and adoption of educational innovations.*

What are system effects? They are effects of the social structure of the system of which one is a member on his behavior.** For example, one can conceptualize a teacher's innovative behavior as explained by two types of variables: (1) the individual's personality, communication behavior, and attitudes; and (2) the make-up and norms of his school, that is, its social structure. The first class of variables is individual, the second is system variables. Both can be used to predict a dependent variable at the individual level, such as teacher innovativeness.

Why would we expect system effects?

1. Any type of human behavior can be partitioned in terms of within and between variance. We generally find a much higher degree of homogeneity within social systems than between social systems. This may in part be due (i) to

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*Evidence of the importance of system (or structural or compositional) effects in explaining individual innovativeness is provided by Qadir's (1966) analysis of data from some 600 villagers in 26 Phillippine neighborhoods. He found that the compositional effects (of neighborhood mean education, mass media exposure, etc.) were about as effective as predictors of individual innovativeness as were individual variables like education, media exposure, etc.

**For a more complete discussion of system effects than we can provide in the present paper, see Blau(1957 and 1961), Davis and others (1961), Tannenbaum and Bachman (1964), and Campbell and Alexander (1965). In these previous writings, system effects have also been called structural or compositional effects.

ecological reasons such as the similarity of climate, heredity, and so forth; (ii) to past interaction, because it is through such interpersonal communication that greater homogeneity (at least in attitudes and beliefs) results over time; and (iii) to selective attraction factors, which act to draw similar individuals to the same kinds of groupings.

2. The group or the social system has a social structure (such as norms) which affect individual behavior in it, because the system is an important reference group influence on the individual's decisions, and because of the social control of the system over the individual's behavior.

The basic assumption of system effects is that more variance in individual behavior can be explained by utilizing independent variables for both the individual and the social system of which he is a part, than by using only independent variables measured at the individual level alone. We ought to have tested this proposition with data from the present study, which could be done because we have potential measures of the system variables.* Such investigation could lead to theoretical understandings about the role of social structure on individual behavior, as well as to practical insight about how to organize education in order to facilitate change.

One of the most important types of system variables that ought to be included in future research is system norms.** Social system norms have an important bearing on the diffusion and adoption of new ideas. Norms are patterns for behavior. Some systems' norms are progressive and encourage change, as in U.S. school systems like Cape Kennedy, Shaker Heights, Troy, and Newton. In these instances educational innovations are likely to diffuse rapidly. If the norms are traditional, however, teacher acceptance of new ideas is likely to be relatively much slower. There is evidence from numerous studies that a system's norms affect the rate of diffusion (Rogers, 1962). Consider two identical, equally well-trained teachers who have just graduated from college. One is employed in a school with modern norms, the other in a traditional system. At the end of one year, we would expect a major difference in the adoption of innovations by the two teachers.

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*Such an analysis of system effects on diffusion is currently underway by F. Floyd Shoemaker for his Ph.D. dissertation at Michigan State University. Unfortunately, due to our belated realization of the importance of system effects on the present study, we have not been able to include the results in this report.

**Needed research in educational diffusion is discussed more fully in Rogers and Jain (1968).

Other structural (or system) variables like leadership style, the degree of centralization of decision-making in the system, methods of supervision, degree of upward communication in the school, etc., should also be investigated in future research.

3. Consequences of Innovation

A crucial question to be answered in future study should certainly be: "What improvements in educational productivity or quality result from the adoption of each innovation?" In other words, we need to know the consequences of educational innovations. At present, we have only a very sketchy idea of the effects of new educational practices in Thailand.

There are, of course, other consequences of educational innovation than changes in educational quality and productivity, and these need investigation too. Organizational researchers have been concerned with such dependent variables as member satisfaction or morale, efficiency, etc. These variables, when translated in terms of educational organizations, may provide meaningful indicators of innovation consequences. By studying such effects, it is possible to integrate research results from educational diffusion studies with the research literature on organizations, as both will be concerned with similar dependent variables.

4. Case Studies of Innovation Flows

Lastly, we see a need for more intensive analysis of the flow of an educational innovation through the hierarchical structure of the Thai educational system. One might follow the diffusion of a new idea almost as if it were a radioactive tracer in plant growth. Such an approach probably will call for a case study, rather than a survey approach. The hoped-for result is a more accurate understanding of the qualitative aspects of innovation diffusion in a social system like the Thai Ministry of Education.

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